

THE EVALUATION OF A PILOT PROGRAMME
FOR ALCOHOL RELAPSE PREVENTION, IN
PATIENTS WITH TRAUMATIC BRAIN INJURIES.

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Title: The evaluation of a pilot programme for alcohol relapse prevention, in patients with traumatic brain injuries.

**Submitted in part fulfilment of the degree of
Doctorate in Clinical Psychology at the
University of Edinburgh**

August 2005

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ABSTRACT

Background: Approximately, 30-50% of people, who acquire a traumatic brain injury (TBI), have a pre-morbid alcohol abuse or alcohol dependency history. The majority of these will continue to have difficulties with alcohol post hospital discharge. Additionally, over 25% of patients with no pre-morbid alcohol abuse difficulties develop such problems. There are no specialist services or treatment approaches available for people with the co-occurring problems of a head injury and alcohol abuse. Alcohol abuse providers tend not to have sufficient understanding of the cognitive or emotional problems that brain injured patients present with or they are reluctant to include these patients in their programmes due to their behavioural difficulties. Brain injury providers are generally not trained to identify or treat patients with alcohol problems. Socio-behavioural approaches form the basis for the majority of current therapeutic programmes but little work has been done on administering any of these with brain injured patients. Previous studies have piloted and evaluated psycho-educational and motivational enhancement approaches. As, relapse prevention is gradually being seen as the more appropriate and effective way of treating patients with alcohol problems, a standardised relapse programme (Warnigaratne et al 1990) was adapted for the brain injury population and evaluated for efficacy.

Method: Twenty hospital inpatients, with TBIs and alcohol problems, were recruited for the study. Ten of these received relapse prevention treatment, over the course of seven weeks and ten were used as controls. Data was collected pre and post intervention on three questionnaires examining motivation, knowledge and self-efficacy. Feedback questionnaires were also administered at the end of each session.

Results: No significant difference was found, on any of the questionnaires, between those who had received treatment and those who hadn't, post intervention. However, all mean scores demonstrated a non-significant trend in the hypothesised direction.

Discussion: Although the results were not significant, this study demonstrated that it was possible to actively engage individuals with a brain injury, in therapeutic work addressing their alcohol problems. It also highlighted the need for further research in this area.

1.0 INTRODUCTION

1.01 Introductory note

Many of the alcohol references and theories outlined in this introduction date from the late 1980s, to the middle of the 1990s. This is not to imply that there have been no recent developments within the field of alcohol treatment but is the reflection of a period of great theoretical and academic interest in alcohol and addiction that occurred during that time. This was driven by the theoretical move from medical approaches to understanding and treating alcohol problems, to a socio-behavioural or psychological perspective (Jellinek 1960; Goodwin 1985; Heather and Robertson 1986). Most of the main theories, currently used, were developed during this time and a lot of the more recent research has involved testing these theories for efficacy and validity. Therefore, there may appear to be a gap in the literature from the middle of the 1990s until the present day for more contemporary theories of alcohol abuse and clinical treatment methods.

A recent review by Peele (2004) highlights that one of the most standard treatment programmes that people with alcohol problems are referred to, continues to be Alcoholics Anonymous (AA) or a similar 'Twelve Step' programme. These carry the additional baggage of religious affiliations, which are often unsuitable and discouraging for those referred. In the United States in particular, courts frequently make a mandatory referral to AA as part of a legal sentence. Peele concludes by describing the non-twelve step program referral options, which have arisen primarily from psychological research. These treatment options are described later in this introduction.

1.02 What is substance abuse?

The way in which a substance abuse problem comes to be defined and identified as such, involves an inter-linked number of factors- social, moral and political, which apply both at the individual and wider social level. For instance, someone who drinks a bottle of vodka a day, who has lost their job, has little contact with friends or family and whose liver can no longer function properly, is readily identified as an individual with an 'alcohol problem' or is an 'alcohol abuser'. The issue becomes a little more blurred when applied to the person who drinks to excess only a Friday and Saturday night, when out at a night club.

There tends to be a general reluctance to recognise a problem when dealing with a legal and sanctioned drug such as alcohol but we ourselves feel that we implicitly have an understanding of the difference between what is abuse and misuse. Edwards et al (1981) highlights some of the common ideas behind these differences:

- 1) Unsanctioned use- the use of a drug not approved of by society or by a powerful group within that society. This is often categorised as abuse.
- 2) Hazardous use- the use of a drug that will probably lead to harmful consequences for the user (either psychological dysfunction or physical damage) eg. smoking
- 3) Dysfunctional use- use of a drug leading to impaired psychological or social functioning (eg. losing a job)

4) Harmful use- use of a drug by a person of whom it is known to have caused tissue damage or mental illness.

Each of these categories may cause different problems for the user and may require different types of intervention. However, being placed in one of the categories does not automatically mean that a clinical problem is present eg. the teenager who gets expelled for drinking alcohol at school. Similarly, an intervention does not necessarily have to be provided if you fall into one of these categories eg. occasional heavy drinking, leading to acute intoxication and hazardous behaviours. Deciding who has difficulties with alcohol use is quite a complex and confusing task, especially given the large number of seemingly interchangeable terms for individuals with alcohol problems eg. alcoholic, addict, alcohol abuser, alcohol dependent etc. Additionally, each of these terms carries a different implicit meaning about the aetiology and core factors involved eg. genetic, lack of personal control, physical vulnerability

1.03 Defining and describing people who have difficulties with alcohol

As the term 'alcohol abuse', as outlined above, is not necessarily synonymous with a clinical problem and does not clearly define who may require treatment, consensus was needed to be reached on how to characterise people with alcohol difficulties and what criteria would be considered. These criteria have evolved over time and resulted in two separate, non-overlapping terms: alcohol abuse and alcohol dependence. It is important to define these terms as they establish a common language, which enables clinicians and researchers to

categorise people with alcohol dependence, abuse and harmful use, to help plan treatments, collect statistical data and communicate research results.

In 1941 Jellinek published a theory of subtypes of what was, until 1980, termed alcoholism. These subtypes were associated with different degrees of physical, psychological, social and occupational impairment caused by alcohol. The American Psychiatric Association's first and second editions of the Diagnostic and Statistical Manual of Mental Disorders, categorised 'alcoholism' as a sub-set of the personality disorders. During the 1970's the Feighner (1972) criteria were developed, in order to establish some research criteria for alcoholism. This drew a division for the first time between abuse and dependence. The third edition of the DSM, published in 1980, dropped the term alcoholism in favour of alcohol abuse and alcohol dependence. Also, for the first time it placed these terms in the category of substance abuse.

The term 'dependence' had been first formally introduced as an alternative to 'addiction' by the World Health Organisation in 1964. This was an attempt to distinguish between the physical and psychological components of addiction. An example of 'physical dependence' in its purest form would be a surgical patient who needs pain relief medication and shows signs of withdrawal but has no desire to continue taking the medication. An example of the psychological component would be intense cravings for alcohol in the form of intrusive and overpowering thoughts. However, as later research proved (Edwards et al 1981), in reality the two components (the physical and psychological) tend to be inextricably linked and a distinction cannot be made.

Early research on alcohol 'dependence' (Edwards & Gross 1976) had considered the essential elements to be a narrowing of the drinking repertoire,

drink seeking behaviour, tolerance, withdrawal, drinking to avoid withdrawal symptoms, subjective awareness of the compulsion to drink and a return to drinking after a period of abstinence.

1.04 Alcohol Dependence

The concepts of 'tolerance' and 'withdrawal' have underpinned and provided the basic structure for, the concept of addiction for many years and were universally accepted as the defining characteristics of physical dependence.

The repeated consumption of alcohol leads to progressive decreases in some of its effects. This is the development of tolerance and it causes the user to increase the amount of alcohol drunk or the frequency of use.

As tolerance grows, symptoms of withdrawal occur. In the mild form this includes irritability, sleeplessness and tremor. In the more severe form, it includes hallucinations, disorientation, memory impairment and seizures. These severe symptoms normally occur forty-eight to sixty hours after withdrawal. In the complete form of alcohol withdrawal syndrome, delirium tremens may develop abruptly, often at night and is often preceded by feelings of disorientation, restlessness and apprehension. As the syndrome develops, hallucinations and feelings of panic start to increase. Delirium tremens subsides after two or three days but has a high correlation with further injury and death through circulatory collapse, hypothermia and pneumonia.

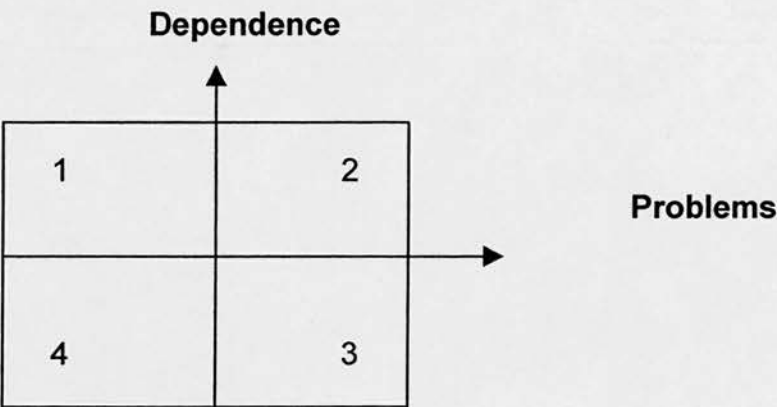
In more recent years the idea of tolerance and withdrawal, as a marker of addiction has been questioned, as tolerance can develop to drugs that are not considered physically addictive eg. cannabis and amphetamines. Similarly there can be withdrawal like symptoms to their discontinuation. Another drug, cocaine, which was not regarded as addictive since it didn't cause the opiate type withdrawal symptoms, is now regarded as causing severe dependence in many users.

Edwards et al (1981) suggests that tolerance and withdrawal, as the purely physical aspects of addiction, should just be seen as a cluster of one of the many factors that go to make up the 'dependence syndrome' and that the essence of dependence was the psychological desire for the drug. This does not disregard the very real and unpleasant experience of the individual who is alcohol dependent and who feels a great deal of anxiety and apprehension about the withdrawal process. The discomfort of the withdrawal symptoms may interfere with treatment or cause the patient to opt out, so it is important to manage this distress and discomfort.

1.05 Dependence and alcohol related problems

The behaviours which contribute to and result from 'addiction' or 'dependence' have traditionally been the most common reasons that an alcohol user presents to a treatment service. A distinction must be made between a) the 'dependence' and b) the various types of problem that are associated with the consumption of alcohol. Such problems include difficulties with physical health, mental health, social functioning and criminal behaviour

(Gossop 1987). These two dimensions (dependence and problems) should be treated as conceptually separate (see diagram below). So, many people can experience social, health and psychological problems due to alcohol but are not dependent on it (they would fall in section 3). Conversely, there are individuals who can be dependent but experience little harm as a consequence (section 1).



Again, there are likely to be positive correlations between the severity of dependence and of the problems. Most of the individuals that are traditionally thought of as alcoholics are high in dependence (eg. poor control) and high in alcohol problems (eg. impaired cognitive functioning)- section 2 on the diagram.

1.06 Current alcohol recommendations in Scotland

The Health Education board for Scotland (1998) define ‘Hazardous’ (risky) drinking as: the regular consumption of over four units (32G of pure ethanol) per day for men and over three units (24g of pure ethanol) per day for

women. The recommendation is a limit of twenty-one units a week for men and fourteen units for women. 'Harmful' drinking is described as a pattern of drinking that causes physical, mental or social harm, whilst alcohol 'Dependence' is the desire (often strong and perceived as over powering) to drink alcohol.

1.07 Current criteria for alcohol problems

The third edition of the Diagnostic and Statistical Manual of Mental Disorders, made **Alcohol Abuse** a residual category for those who never met the criteria for dependence but who drank despite alcohol related physical, social, psychological and occupational problems or who drank in dangerous situations (eg. in conjunction with driving). This meant that aspects of these patients' problematic behaviour could be given some meaning, even when the behaviour was not associated with dependence.

The current DSM-IV criteria for **Alcohol Dependence** are three or more of the following for over a year:

- A) Tolerance (increased drinking to achieve the same effects)
- B) Alcohol withdrawal signs or symptoms
- C) Drinking more than intended
- D) Unsuccessful attempts to cut down on use
- E) Excessive time related to alcohol (either obtaining it or with a hangover)
- F) Impaired social or work activities due to alcohol
- G) Use despite physical or psychological consequences

In summary, there are differences in individuals who are alcohol abusers and those who are alcohol dependent. This difference is important when considering patients for inclusion in various treatment programmes and for the provision of services for those who need them the most. Being classified as an alcohol abuser does not necessarily mean you have a clinical problem and require an intervention. For those who are classified as alcohol dependent, treatment focuses on the two separate but linked dimensions of dependency and associated psychosocial problems. Approaches to dealing with these dimensions first requires an understanding of some of the main theories underlying them.

1.08 Theories of alcohol abuse and dependence

There are a great deal of theories that try and explain substance dependence or at least aspects of addictive behaviour. However, the fundamental nature of addiction remains controversial (Leonard and Blane 1999). Nathan (1980) lists the different theories under the following headings: Biophysical and genetic, Socio-cultural, Psycho-analytic and Behavioural. Similarly, Milby (1981) distinguishes between theories which are concerned with aspects of dependence (ie. tolerance and withdrawal) and those that attempt a broader explanation of addictive behaviour (eg. learning theory, opponent process theory). In reality, alcohol problems require an interactionist view of their aetiology and will involve social, psychological and pharmacological factors. Additionally, each of these factors will have a

different weight depending on the individual. Adopting just one theory will lead to a very narrow focus and limit the success of any treatment.

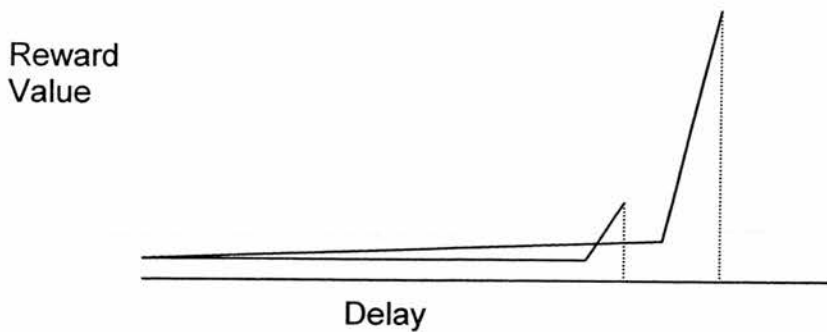
The following theories are presented as separate but it is acknowledged that they more than likely interact and influence each other.

1) Physiological Theories

There has been speculation of a biochemical predisposition to alcoholism and it is believed that individual's with alcohol difficulties may differ in the way they metabolise alcohol. However, research seems to suggest that these differences are the consequence not the cause of the dependence (Dietrich 1976). There has been a suggestion that genetic factors may play a part, although the effect may not be a predisposition to alcoholism but instead a general predisposition to psychiatric disorders (Murray 1979).

The dopamine reward system has also been investigated as a potential neuro-chemical basis underlying the compulsive use of alcohol (Liebman and Cooper 1989).

A different kind of explanation for addictive behaviour, has been suggested by Ainslie (1992). It is part of a body of work known as 'behavioural economics'. Ainslie's theory seeks to explain the core phenomenon of addiction, that is, why an addict repeatedly returns to a behaviour he has vowed to give up. He claims that the preference for a small early reward over a larger later reward is an inherent part of our human nervous system and results from the marked upward concavity in curves describing the effectiveness of delayed rewards.



This is known as 'hyperbolic discount functioning' and means that, for an alcoholic, the preference for a later larger reward over a small early reward reverses as the latter is approached over time and therefore explains why the addict surrenders to temptation.

2) Behavioural Theories

It has been well established that animals will increase their rate of operant responding, when it followed by intravenous opiates or intravenous sedatives (Wikler 1948; Kumar and Stolerman 1977). The alcohol related behaviours and objects become secondary reinforcers as a result of their repeated pairings with the primary alcohol related reinforcement. Conversely, stimuli associated with withdrawal symptoms acquire conditioned aversive properties. High relapse rates may then be due to incomplete extinction of both positive and negative reinforcers.

Another conditioning theory, called The Opponent Process Theory of tolerance, states that after repeated episodes of exposure to alcohol, the conditioned response to alcohol moves to the opposite direction compared to the original unconditioned response (ie. from US of relaxation/relief to new CR of restlessness). The stimuli associated with the unconditioned

response (e.g. smell of alcohol) now become associated with the opposite effect (e.g. feelings of restlessness), so the person produces a compensatory reaction, in which they must drink more alcohol to achieve the original effect i.e. they develop tolerance (Siegel 1979).

In more recent years there has been a move towards positive incentive attachment models. These assume that addiction is the result of the development of an attraction or attachment to the addictive substance or activity as the result of positive incentive learning. An example of such a model is by White (1996). He claims there are three parallel learning and memory processes- these are 'conditioned incentive learning', where stimuli associated with alcohol use become conditioned and able to serve as incentives for future behaviour; 'declarative learning', where learning takes place about the relationship between cues and 'habit learning' where stimulus response associations are strengthened.

3) Personality Theories

These claim that individuals who become dependent on alcohol are said to be predisposed towards it due to their personality characteristics and the addiction is then just a symptom of this underlying problem (Gossop 1981). As mentioned earlier, The American Psychiatric Association's first and second editions of the Diagnostic and Statistical Manual of Mental Disorders, categorised 'alcoholism' as a sub-set of the personality disorders. However, it's clear that alcohol dependent individuals comprise quite a heterogeneous population and it would be too simplistic to refer to a single addictive personality. Despite this though, a number of

researchers (Barnes 1979; Gossop and Eysenck 1980) have found that alcohol dependent patients have extremely high levels of neuroticism, compared to controls and are more bothered by affective difficulties, such as anxiety and depression. Other studies suggest that alcoholics score highly on measures of hostility and psychopathic deviation (Gossop and Roy 1976).

4) Social Theories

Studies indicate that the social correlates of alcohol dependence are social and economic disadvantage. Low economic status, low educational achievement, disrupted family life and crowded housing conditions are strongly related to addiction (Chein et al 1964).

Immediate social influences contribute to the development of drinking patterns (Jessor and Jessor 1975) and continue to play an important part in the maintenance of drinking patterns.

5) Cognitive Theories

Early attempts to explain addiction in terms of cognitive (memory and attention) schemata, which embody the state of addictive attachment, were made by Solomon and Corbit (1973) and Leventhal and Cleary (1980). These theories have been expanded more recently, for example by Niaura et al (1991) in their Bioinformational Model. They believe that information concerning alcohol use and its effects are represented as a 'propositional neural network' that encodes information about stimulus elements (the setting and triggers that activate the network), response

elements (cognitions, physiological responses and alcohol seeking behaviour) and meaning elements.

Similarly, Tiffany (1990) suggested that alcohol seeking behaviour represents skilled activity controlled largely by automatic processes organised in unitised memory structures in the form of schemata.

Of course, individuals are actively involved in their alcohol use and do not just passively fall victim to alcoholism. Their attitudes, beliefs, intentions and expectations all play an important role in their use of alcohol. Stockwell et al (1977) found that many alcoholics expect alcohol to reduce feelings of tension and this may have been as influential in their decision to drink, as any actual pharmacological effect. Marlatt and Rosenhow (1980) have also pointed out that an alcohol abusers expectations and beliefs can induce feelings of craving and lead to a loss of control.

What an individual believes about alcohol and its strength of influence is also important. Robinson (1972) found that if the person accepts the 'sick role' view of alcoholism, it had a negative impact on treatment, since it carries the assumption that sick people cannot cure themselves, with their own effort. Once a 'disease' has been acquired it needs external medical help to get better. The person becomes very passive in treatment and their subjective feeling of self-efficacy is lowered. This is then related to a higher chance of alcohol relapse (Marlatt and Gordon 1985).

The factors that lead to alcohol problems are diverse and multidimensional. Consequently, there is no single treatment of choice. There

needs to be precise specification of the underlying mechanisms involved for an individual case, in order to provide effective treatment.

1.09 Approaches to treatment

The nature of any treatment programme would be dependent on an individualised assessment, which would identify the nature of the problem (in terms of aetiology and function) and set appropriate and achievable treatment goals. These goals may consist of a number of the following generic goals: the reduction of psychological and social problems, either directly related or not directly related to alcohol use; the reduction of harmful behaviour associated with alcohol use; the attainment of controlled drinking or total abstinence.

A major shift in thinking occurred in relation to whether total abstinence was the only treatment goal and whether controlled drinking was a feasible alternative. Davies (1962) published the first paper on the subject, which showed that alcoholics could actually return to a normal, moderate drinking pattern. Over the years there has been a large number of studies which have confirmed this viewpoint (Glatt 1983; Pattison 1976; Heather and Robertson 1981). A lot of the controversy in this area centres around treatment matching. Pattison (1976) pointed out that only 10-15 percent of alcoholic patients are able to return to normal drinking after treatment. Many clinicians then felt that it was more appropriate to just make abstinence the goal, as it was impossible to predict who would be successful in regaining control. However, studies suggest that moderate controlled drinking is likely to be a more appropriate

and achievable goal for those patients who were moderate drinkers (Orford et al 1976).

The main alcohol treatment approaches fall into three broad categories: Medical treatments, Conditioning treatments and the Social-Behavioural treatments (which include Relapse Prevention).

1.10 Medical Treatments

The most immediate medical treatment involves detoxification and the management of withdrawal symptoms, caused by the physical dependence. The process of withdrawal is normally the first stage of a wider treatment programme. There is evidence that suggests that only a minority of patients need to be admitted to an in-patient detoxification service (Miller and Hester 1980). The detoxification is achieved within a few weeks by administering gradually smaller doses of an alcohol substitute drug. Minor tranquillisers are sometimes prescribed but there is little evidence of much benefit from them (Mayer and Myerson 1971). Similarly anti-depressants and psychoactive medications have poor evidence bases (Pattison 1976).

Disulfiram (Antabuse) is used to help ex-alcoholics remain abstinent. When combined with alcohol it inhibits the enzyme aldehyde dehydrogenase and produces a violent and unpleasant physical reaction, including dizziness, nausea and vomiting. Findings by Armor et al (1978) and Fuller et al (1986) indicate that those patients taking Disulfiram do better than those who do not.

The traditional view of alcohol dependence is that it is a 'disease' and can only be treated by medication alone. Unfortunately, this has hindered the

development of other holistic treatments, as so much effort has been devoted to uncovering the one drug that would 'cure' alcohol addiction.

1.11 Conditioning treatments

These were early treatments based on the behavioural principles of cue exposure, extinction, participant modelling and response prevention. Cue exposure attempts to reduce the power of alcohol related conditioned stimuli, through classical conditioning. The therapist identifies those events that act as signals or cues for drinking (eg. anxiety) and then the patient is systematically exposed to them and assisted to avoid drinking in response to them. This approach has been used to establish abstinence but has also been used for controlled drinking (Heather et al 1986).

Counter conditioning has also been used as a treatment method. This was an attempt to establish a conditioned aversion to alcohol using chemical or electrical consequences in the presence of particular stimuli associated with alcohol use. Aside from the dubious ethical principles of this type of aversion therapy, the research evidence to support it is mixed. Voegtlin (1940) reported that following chemically induced nausea, over sixty percent of patients remained abstinent. However, Wallerstein (1956) found only a four percent success rate.

Needless to say, conditioning treatments are used far less frequently now than they used to be and the move has been towards more positive skill based interventions that empower the patient.

1.12 Social-Behavioural

There is general agreement that a key issue in recovery and participation in treatment is patient motivation. For a long time motivation was assumed to be a state or personal trait of the alcohol dependent individual coming into treatment. Those who refuse, don't comply with or fail in treatment, are said to have been 'not motivated enough'. The idea was then that the patient would hit 'rock bottom', a point at which they were sufficiently motivated to admit having a problem and needing treatment. Similarly, lack of motivation was explained as the result of defence mechanisms (eg. denial) inherent in the patient and a normal part of the disease. However, over the last thirty years there has been a change in thinking, as professionals working in the field began to recognise the influence of the patient's environment more and motivational interventions began to be explored.

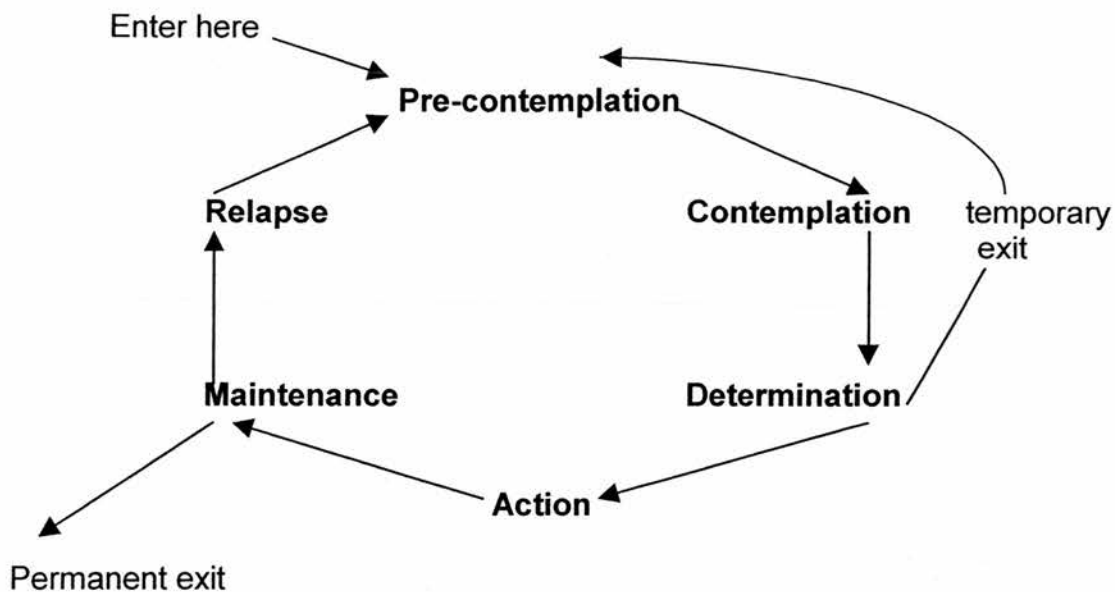
Factors external to the patient were seen as contributing to their motivation to change. The term 'enabling' began to be used to describe the behaviour of those in the immediate environment who reinforced the continuation of patient's alcohol abuse. Continued denial and low motivation for change could also be caused by interlocking patterns between patients and 'co-dependents'. Alcohol abuse was seen as not just as the pathology of one person but a complex pattern involving interactions between the individual and those around them. This led to the exploration of a variety of strategies for triggering the kind of crises which would lead an individual to seek help (eg. Miller & Rollnick 1991). Motivation then came to be understood, not as a static something an individual 'has' but rather a fluid

concept that an individual 'does'. This involves recognising that there is a problem, searching for a way to change it and then starting and maintaining a strategy for change.

One of the most influential and useful theories of change is that proposed by Prochaska and DiClemente (1982):

1.13 The Stages of Change Theory

This theory proposes that change is rarely a sudden event, but instead happens gradually, through a series of stages and cycles. These stages are illustrated in the diagram below. In the 'pre-contemplation' stage a person does not even consider that there is a problem or that change is possible. As they do not perceive that they have a problem, these people are rarely seen in therapy. As time passes, the person's awareness may start to be raised and they may begin to see some cause for concern. They may simultaneously want things to be different and not want things to be different. This second stage is the 'contemplation' stage and is often characterised by feelings of ambivalence. This can be conceptualised as a see saw that continually rocks back and forward between the motivation to change and the desire to stay the same. The potential adverse consequences of alcohol use are counterbalanced by the perceived benefits of use.



At the 'determination' point, the balance has tipped in favour of change. Enough weight has been added to the change side to create an imbalance (albeit temporary). This stage is a window of opportunity, which opens up for a short period of time. If the person gets through then the process of change continues. If not, they can return to the contemplative or pre-contemplative stage.

The 'action' stage is the process of doing actively doing something about change and is normally the point where the person is in treatment. The next stage, the maintenance stage, is the most challenging (Marlatt and Gordon 1985). It is easy to stop drinking but more difficult to manage to stay sober. In this stage the person must develop strategies to help maintain the gains made and to prevent relapse.

Relapse in addiction work is very common (Hezler et al 1985). The main objective is to try and recover from the lapse as quickly as possible and resume the change process. Normally the patient will go round the cycle several times before leaving via the maintenance stage. Each relapse episode

is treated as a learning opportunity, which highlights skills that have to be learnt or reinforced.

People need different types of help at each stage of the cycle. This matching of processes and stages of change serves as a useful guide for therapist intervention. The pre-contemplator needs their awareness raised; the contemplator needs to resolve their ambivalence; the person at the determination point needs help to sort out different options for change; during the action stage they may need help carrying out the strategies for change; in maintenance they need to develop and practice the skills for staying sober and finally in relapse they need help to recover as quickly as possible.

Miller (1983) has used this model as the foundation of a treatment called 'Motivational Interviewing'. This is an interpersonal process that aims to increase levels of cognitive dissonance, until a certain mass of motivation has been achieved, which makes the patient willing to consider alternative thoughts or behaviours and finally make a change. Patient denial is seen as normal ambivalence, which the patient needs to learn to tolerate and work through. It is the way the therapist handles this ambivalence that determines the degree of patient resistance and change. The therapist actively encourages the patient to identify their problems related to drinking, to express concern about these problems and make a cost benefit analysis of the various options available. This approach is designed to emphasise the importance of personal responsibility and the internal attribution of choice. Blaming, labelling power struggles, attempts to get the patient to focus on treatment issues they are not yet ready for and arguing are avoided

The other main social-behavioural approach, to treating patients with alcohol problems, is Relapse Prevention. A number of different interventions, based on this approach, have sprung up within the last fifteen years but Marlatt and Gordon's (1985) model is widely regarded as the most influential and effectual (see Lindsay and Powell 1994, for a review). As Marlatt and Gordon's model is the basis for this research study, it will be examined in more detail later. However, several of the other relapse prevention approaches are worth briefly describing.

1.14 Enhancing Self-Efficacy

Taking Social Learning Theory (Bandura 1977) as the basis, Annis (1986) developed a relapse prevention model around the concept of self-efficacy. This model predicts that a successful treatment has its influence by enhancing the patients' efficacy expectations. That is, their judgement that they can execute a certain behaviour pattern. The efficacy expectations influence the initiation, generalisation and maintenance of coping behaviours. Additionally, their strength determines how long the coping behaviours are maintained under stress. Annis (1986) recommends that the patient is systematically taught self regulatory and social skills, so they can cope better with slips. The treatment is only effective in as far as it increases the patients' expectations of what they can achieve. The treatment programme is in two phases. Phase one is concerned with initiating changes in drinking behaviour and phase two deals with the consolidation of this progress, through mastery experiences. Many of the elements of Annis's programme are already

included within Marlatt and Gordon's treatment approach. Their programme also tends to be less narrow in focus and slightly more eclectic.

1.15 Self-control Training

This treatment approach was developed by Miller (1977) and has more of an educational orientation than any of the other programmes. Patients are taught six different components: 1) goal setting 2) monitoring alcohol consumption 3) rate control training 4) self reinforcement training 5) functional analysis of their drinking behaviour and 6) alternative (coping) skills training. This programme has proved to have a broadly favourable outcome and effectiveness for alcohol problems (Caddy and Lovibond 1976). It probably lends itself to a more didactic treatment environment, than other approaches, which is limiting for the patient sample used in this research study.

1.16 The Public Health Model of prevention in relation to alcohol

The traditional model of prevention identifies three different levels:

- 1) Primary Prevention- this refers to the removal of the cause of a disorder to prevent its occurrence e.g. prohibiting the sale of alcohol
- 2) Secondary Prevention- this refers to the early identification and treatment of a disorder to arrest its development e.g. health education programmes aimed at young adults
- 3) Tertiary Prevention- this is the treatment of a developed disorder to stop its further development or reduce the risk of relapse.

An alcohol relapse programme obviously fits into the definition of the last type of prevention. However, Marlatt and Gordon (1989) argue that the approach can also be applied at the primary and secondary levels.

1.17 Relapse Prevention in Alcohol Abuse and Dependence

Current conceptualisations of an individual who is alcohol dependent integrates medical, psychological and social factors, which has major implications for how a person is assessed and treated. This is actually a relatively recent approach, as up until the middle of the 1980s medical factors were seen as most relevant. The traditional medical viewpoint, which is characterised by the disease model, concentrated assessment on genetic and familial factors. Treatment was then based on 'detoxification' and the use of drugs to ameliorate the withdrawal effects. Jellinek (1960) states that the underlying assumption was that once a detoxified individual consumed alcohol after a period of abstinence, their physical make-up was such that they would revert to their pre-treatment levels of drinking. There is very strong evidence which has found a genetic link in problem drinking (Goodwin 1985) and a difference in the physiological make-up of problem drinkers which affects the way they metabolise alcohol.

However, there is also some evidence contrary to the pre-determinism and narrow focus of the biological theory. Heather and Robertson (1981) found that even severely dependent problem drinkers, can continue to drink at drastically reduced levels following 'medical' treatment. This meant that the biological model may be partly true but didn't capture the whole truth. In fact,

Heather and Robertson's study had a major impact on the prevailing view of the subject, which had always made abstinence the only goal of treatment. For the first time, controlled drinking became the outcome measure, which provided a far more flexible and holistic approach to treatment.

The emergence of social learning theory (Bandura 1977) provided the basis for the development and proliferation of a new field of therapies that could address this holistic approach to change (eg. the cognitive behaviour therapies). As well as the Motivational Change Intervention (Prochaska & DiClemente 1982) described earlier, a relapse prevention approach also provides an appropriate basis for treating the alcohol dependent patient. Relapse prevention is a self-control programme, combining behavioural skills training, cognitive interventions and life style change procedures, to enhance maintenance of habit change. It is based on the theoretical model of the relapse process proposed by Marlatt and Gordon (1985).

1.18 Definition of relapse

Often relapse is described as the most the most common outcome of interventions when working with 'addictive' behaviours. The traditional, medical definition of the term is- 'the recurrence of symptoms of a disease after a period of improvement' (Wanigaratne et al 1990). This definition carries with it some problematic implications:

- 1) Total abstinence is the only goal
- 2) The achievement of reduced (safe) levels of drinking cannot be accommodated

3) Relapse becomes an 'all or nothing' behaviour.

This last point is contrary to many research findings, which indicate that relapse is a process, not a single event (Litman 1980; Marlatt & Gordon 1980; Curry et al 1987). A more helpful way of looking at relapse is to define it as:

- 1) A return to previous levels of activity following an attempt to stop or reduce that activity or
- 2) The failure to reach a goal set by the patient over a period of time.

Returning to the traditional definition of relapse for a moment, any lapse or slip would be viewed as the trigger for a full blown relapse i.e.

Lapse = Relapse. Unfortunately, this definition removes any potential the patient may have for learning, as it doesn't leave any margin for error. When it becomes firmly embedded in their belief system, it invariably becomes a self-fulfilling prophecy eg. 'One drink and a drunk.'

Wanigaratne et al (1990) suggest an alternative way to define a lapse- not as a relapse, but as 'any discrete violation of a self imposed rule or set of regulations governing the rate or pattern of a selected target behaviour'. This means that the focus of a treatment programme is not the prevention of a lapse, but of equipping the patient with a plan of action to manage the situation if or when it does occur. The relapse is seen as a process consisting of cognitive, behavioural and emotional components, all of which determine whether the patient will return to their previous level of alcohol consumption. This model, formulated by Marlatt and Gordon (1985), has been adopted as the theoretical basis of all the major relapse prevention programmes

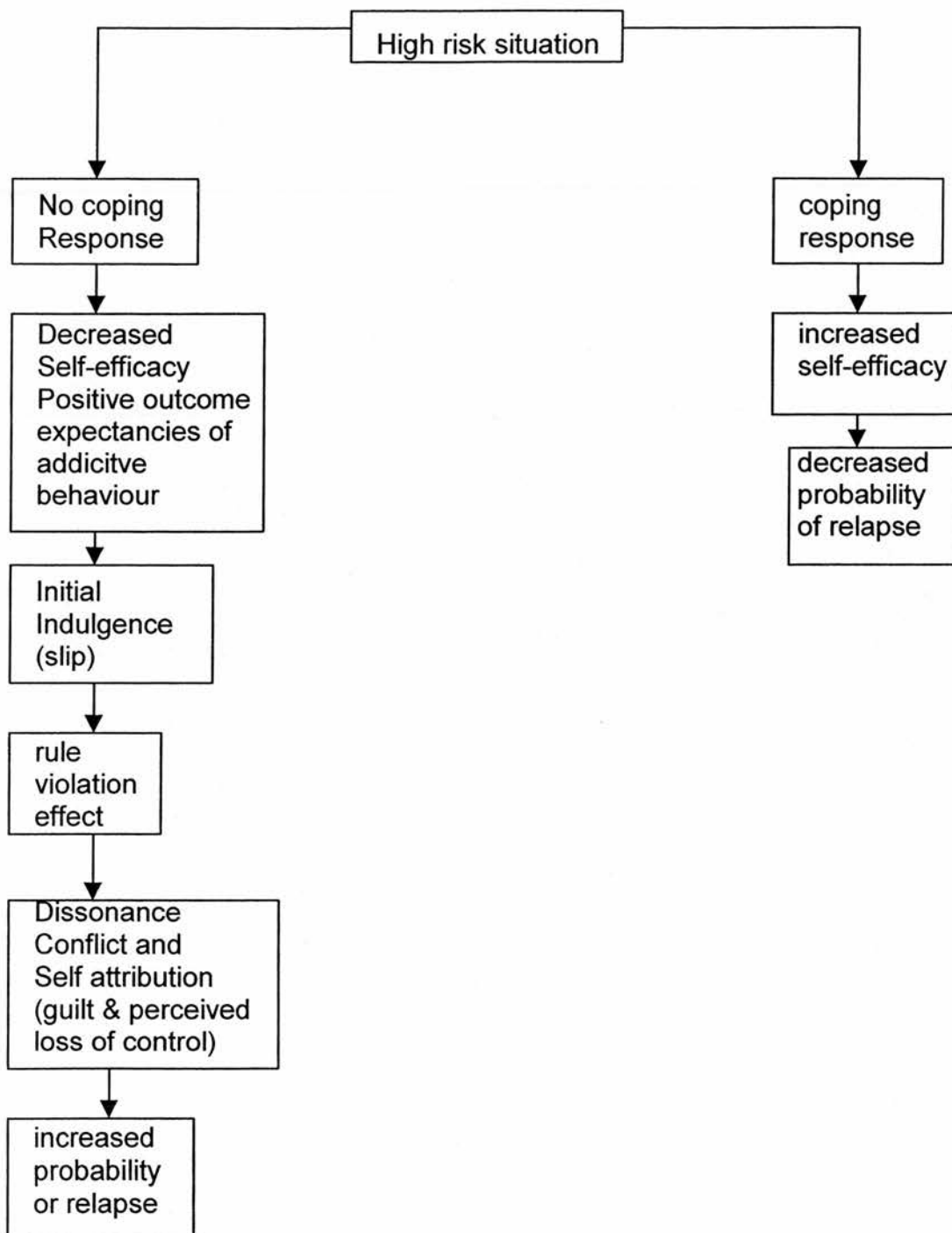
(Langley et al 1990; Wanigaratne et al 1990). It would be administered during the maintenance phase (in Prochaska and DiClementi's model), when patients are motivated to make a change in their drinking behaviour and have taken some voluntary action towards achieving that goal.

High Risk Situations

During the maintenance phase, the biggest obstacle is caused by exposure to High Risk Situations (Cummings et al 1980; Annis and Davis 1988). These are any situation which threaten the patient's sense of self efficacy and increase the chance of relapse. They can be very particular to the individual but more often than not, fall into a small number of generalised categories e.g. interpersonal conflict or social pressure. If the patient feels that they have the ability to cope with the high-risk situation and manages to stick to their treatment goal, they experience an increased sense of self-efficacy. This then increases the chances that they will manage future high-risk situations with more confidence.

Coping ability

Increasing their ability to cope, occurs through the skill teaching component of the programme. Such skills would include emotional regulation, problem solving, assertion and interpersonal skills. The ability to cope with high-risk situations is the key element in the relapse prevention model.



Marlatt and Gordon's Cognitive/behavioural model of the relapse process (1985).

The other two important elements are increasing the patient's 'awareness' and assisting them make 'life style' changes. Often, patients have used alcohol as means of managing a wide range of stressors, such as anxiety, conflict, pain etc. and are frequently lacking in adaptive coping mechanisms. They may have actually failed to develop these coping skills to begin with or may have become de-skilled in using them. The goal of therapy may then be to raise awareness of an alternative way of approaching the situation and then teaching a new skill to help resolve it or it may be about re-establishing a 'forgotten' skill.

Self efficacy

Confidence (or efficacy expectations) of dealing with high risk situations have been shown to be predictive of relapse (Annis and Davis 1988). During times of decreased self-efficacy (normally in a high-risk situation), the patient tends to predict a higher positive outcome expectancy from the addictive behaviour. There is cognitive dissonance between their feelings of inadequacy caused by being unable to cope with the high-risk situation and the attractiveness of engaging in the addictive behaviour. In other words, when the patient is very low in confidence, drinking alcohol seems a more positive course of action and all the negative consequences are ignored.

Cognitive Distortions

In a high-risk situation, if patients do not have an adequate coping mechanism and experience lowered feelings of self-efficacy, they are more likely to have a slip or lapse. Following this, Marlatt and Gordon (1980)

believe they experience a series of characteristic thinking errors and cognitive distortions:

- Rule Violation Effect- this is reflected in the statement 'one drink and a drunk'. There is no margin for error or leeway. The individual imposes strict boundaries and rules on themselves and any deviation from the rule is perceived as catastrophic. It is a very 'all or nothing' way of thinking and behaving.
- Dissonance Conflict- This idea comes Festinger (1964). If there is a conflict between what an individual believes or expects from themselves and between their actions, then a dissonance is established. This creates a state of distress, which the person is motivated to reduce. The reduction is achieved by altering either their belief or their behaviour. So, if the individual has the belief that they are in control and have a lapse, then a dissonance is established. The person could reduce the dissonance by continuing to drink but altering their belief e.g. 'I never had control in the first place, I might as well continue drinking'.
- Negative Self Attribution- Following a lapse, the person may find that they either establish or more likely reinforce negative beliefs about themselves eg. 'I am weak person for not being to control my drinking'.

Lifestyle Imbalance

Within the relapse prevention model, lifestyle imbalance is described as the imbalance between external pressure (the shoulds) and the enjoyable activities the person does for themselves (the wants). Overall stress levels are

related to lifestyle imbalance, in terms of how 'deprived' a person feels. This subjective judgement is often used as a justification for drinking and increases the probability of relapse. eg. 'I deserve a drink because of the difficult day I've had at work'.

Lifestyle imbalance is one of a number of antecedent factors in the relapse model. The other important factors are:

- urges and cravings, mediated by positive outcome expectancies
- the desire for indulgence
- cognitive factors such as the defence mechanisms of rationalisation and denial (which help reduce guilt and anxiety)
- high risk situations

Marlatt and Gordon's (1985) relapse model provides a framework for proactive interventions, which are aimed at raising feelings of self-efficacy, through teaching new skills. It also provides a clear framework for analysing a particular relapse episode. A complete alcohol relapse treatment programme, consists of two main components- a specific maintenance programme and a global lifestyle change programme. The goals of the maintenance programme are:

- 1) To teach the patient the skills of identifying, anticipating, avoiding and coping with high risk situations
- 2) If a slip (relapse) occurs, teaching the skills to prevent it becoming a full blown relapse
- 3) Increasing or restoring the patient's self-efficacy.

The goals of the life style change programme are:

- 1) to identify sources of stress in the patient's life
- 2) to identify and change unhealthy habit patterns
- 3) to find and take up positive activities
- 4) to establish a balanced life style

1.2 Traumatic Brain Injury

Traumatic brain injury is any sudden physical damage to the brain. This damage may be caused by the head forcefully hitting an object such as the dashboard of a car (a closed head injury) or something passing through the skull and piecing the brain, as in a gunshot wound (penetrating head injury). Traumatic head injury is the most common cause of brain damage (Kurtzke 1984).

The peak ages for acquiring a head injury are between the ages of 15-24 years with high coincidence rates in the first five years and for the elderly (Goldstein and Levin 1990). Falls in the home are the leading cause of injury for children and elderly people. Violent shaking of an infant or toddler is another significant cause. Accidents involving moving vehicles account for approximately half of all head injuries in the adolescent and adult group (Spivack and Balicki 1990). Assaults, sports and recreational activities and accidents in the workplace account for the rest. Males tend to sustain injuries twice as frequently as females (Naugle 1990). Other risk factors are low socio-economic status, unemployment and lower educational levels.

1.21 How the brain is injured

The effects of a blow to the head on brain function occur because of two factors:

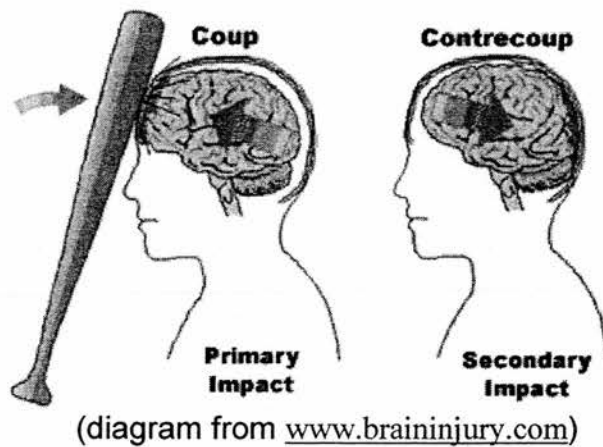
- 1) the structural characteristics of the skull and the brain and
- 2) the direction and size of the forces acting on the head

Brain tissue is very soft, with a consistency of thickened or set custard and is covered by three membranes or layers, of varying toughness. The outer most of these, the dura-mater is connected to the inside of the skull at various points, which serves to suspend the brain within the skull. The brain is cushioned by cerebrospinal fluid, which fills a series of ventricles deep within the brain. It acts as a shock absorber and helps maintain the shape of the soft nervous tissue. Blood vessels run throughout this tissue supplying oxygen to the cells. The brain itself sits on top of the brain stem, which is an extension of the spinal cord. This passes out of the base of the skull through a hole called the foramen magnum.

Brain injuries are due to three characteristics of the brain skull anatomy:

- 1) the rigidity of the skull and the rough contours on the inside surface
- 2) the incompressibility of brain tissue
- 3) the susceptibility of the brain to shearing forces.

The first two of these characteristics give rise to contusions or hematomas (ie. bleeding) on the surface of the brain. There are normally two contusion sites in a brain injury, one at the site of the blow called the coup injury and one at the point where the brain bounces off the skull after being moved from the site of the original blow, the contre coup. There is also some bleeding at the points where the dura-mater is torn away from the inside of the skull.



The bottom inside of the skull has many bony protuberances, which directly damage the tissue on the ventral surface of the brain as it bounces back and forward.

The third characteristic, which is the brain's susceptibility to shearing forces, is involved in injuries caused by rapid and forceful movements of the head. eg. car crashes. Rotational forces, associated with rapid acceleration and deceleration of the head, are smallest at the base of the brain but successively increase at increasing distances from this point. This causes different levels of the brain to move relative to one another, which stretches and tears the axons and myelin sheath. The small blood vessels within the brain are also damaged, which causes bleeding deep within the brain. This all causes pressure to be built up and the brain is pushed against the skull and gradually pushed down through the opening at the base of the skull. The nuclei in the brain stem, which control breathing and cardiac function, will eventually be compressed resulting in death.

A penetrating head injury damages the brain in a slightly different way. The amount of damage caused is determined by the amount of energy translated to the brain during the event (Grafman and Salazar 1987). Damage

caused by bullets or other puncture wounds, results in tissue damage mostly along the path of the intruding object. Most of the rest of the brain usually remains intact. However, the penetrating object may also cause damage throughout the brain as a result of shock waves and pressure effects (Grubb and Coxe 1978).

1.22 Severity of Injury

This is normally determined by loss of consciousness and length of post traumatic amnesia (difficulty remembering new information after regaining consciousness). A mild head injury, is one in which the period of unconsciousness is less than twenty minutes and post traumatic amnesia lasts for less than one hour. A head injury in which the person is unconscious for at least one day and experiences post traumatic amnesia for longer than twenty four hours is considered severe.

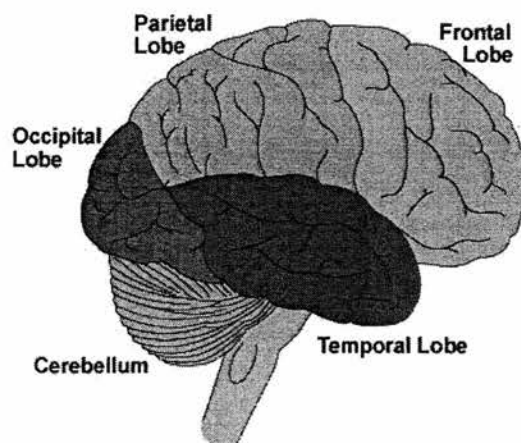
The Glasgow Coma Scale has been used to predict the severity and likely outcome for persons who have suffered a head injury. It rates the severity of a person's injury based on their ability to open their eyes, move and speak. The scale runs from one to fifteen. The more severe the injury, the poorer the performance, lower the score and less likelihood of recovery. This scale is useful for predicting early outcome but is not as useful for estimating how that person will eventually function in daily living. To determine this involves detailed multidisciplinary assessments from neuropsychologists, speech therapists, occupational therapists and physiotherapists. The effects

of a head injury, observed in these assessments can be classified into three broad groups- the physical behavioural and cognitive.

1.23 The effects of a head injury

It would be impossible in the given space to detail the wide variety of possible consequences of head injury or explain their neuropsychological basis. In fact, any brain function can be disrupted by a head injury, to any level of severity (Lezak 1995) and the nature of the symptoms depends, in part, on where the brain has been injured. For the purposes of the present study though, several of the more common, pronounced impairments will be described.

Some of the most common symptoms are very briefly described, according to location, in the following section:



(diagram from www.braininjury.com)

1.24 The Frontal Lobes

Damage to this part of the brain can result in a variety of complex symptoms, covering cognitive, physical and behavioural functions. Physical difficulties include the loss of simple movement of various body parts (ie. paralysis), whilst the major cognitive problems tend to be grouped under the term, the 'Dysexecutive Syndrome'. This refers to a varied collection of deficits, that was previously called the 'frontal lobe syndrome'. There is a great deal of variability in the extent and degree of impairment but certain features remain quite characteristic. Rylander (1939) described them as 'disturbed attention, increased distractibility, a difficulty in grasping the whole of a complicated state of affairs....well able to work along routine lines but cannot learn to master new types of tasks'. There can also be difficulties sequencing complex movements to complete multi-stepped tasks, problem solving and persistence of a single thought (perseveration). Shallice (1982) refers to this pattern of deficits as an impairment of attentional control due to problems with the supervisory system that exerts an executive function.

There are also changes in social behaviour and personality, which are associated more with damage to the lateral orbital prefrontal cortex (Mega and Cummings 1994). These include agitation and irritability, verbal and physical aggressiveness, impulsivity, depression and an egocentric orientation in interpersonal relationships.

1.25 The Parietal Lobes

The main function of this lobe is 1) to receive and discriminate basic somatosensory data 2) to analyse and 'perceive' such data 3) to relate these

data to auditory and visual information available from the temporal and occipital cortex and 4) to help control bodily movements (Powell and Wilson 1994). The tertiary area of the parietal lobes, is responsible for the formation of abstract symbolic representations of the world. The right hand side being more visually orientated, whilst the left is more verbally orientated.

As a consequence damage to this lobe affects the ability to read (alexia), leads to difficulty drawing and problems finding the name of an object (anomia). There can also be a lack of awareness of certain body parts or their position in the surrounding space (apraxia) and difficulties distinguishing left from right.

1.26 The Occipital Lobes

This lobe is mainly involved in the perception of form, colour and pattern and in locating a visual stimulus in space. Damage to any of the anatomical structures leading from the optic nerve to the primary occipital cortex, will result in visual field defects, such as hemianopia (blindness in the left or right visual field) or scotomas (blind spots).

Damage to the remaining parts of this lobe (ie. the secondary and tertiary areas) results in higher level defects, of which the visual agnosias are the most common. These refer to deficits in naming, using or recognising stimuli presented visually.

1.27 The Temporal Lobes

There are four main functions associated with this lobe- auditory sensation and perception, language comprehension, long term memory and personality or affect.

It follows that damage to this lobe will produce disturbances in what we hear, difficulty identifying and verbalising about objects and problems in understanding spoken words (known as Wernicke's Aphasia). Memory is most profoundly affected when both lobes are damaged, particularly in the medial and hippocampal aspects. The severity of the memory impairment varies according to the size of the lesion and its location (right hand side lesions impacting significantly less on verbal memory). Finally, temporal lobe lesions have been known to contribute to an increase in aggression, changes in sexual behaviour and disturbances in emotional control.

1.28 The Cerebellum

This a brain stem structure, generally thought of as an important part of the motor system, which has a role in controlling whole body movements and relatively independent movements of the limbs and fingers. Damage results in an inability to co-ordinate fine movements, losing the ability to walk and tremors. There is also the possibility of experiencing poor balance and dizziness.

Whilst the physical and behavioural effects are a significant challenge for the patients and care givers, it is often the cognitive difficulties which are the most difficult to understand and deal with. This is partly attributable to

them being 'invisible' deficits, in comparison to the more obvious physical and behavioural. However, amongst those with a mild or moderate injury, these deficits can be devastating, as they prevent the individual returning to the 'normal' life they knew previously. Employers and friends may find it difficult to understand why the person they knew cannot act appropriately or remember instructions, when the apparent physical damage is negligible.

The symptoms of a traumatic brain injury should theoretically improve over time as the brain heals and patient learns compensation techniques. Most rapid improvement occurs within the first year (Webster and Scott 1988) but spontaneous recovery can occur until two and a half years post injury and at a slower rate thereafter (Donoghue 1995).

The effects on the individual can be equalled or even surpassed by those on the family. This is because brain injuries are known to be an extreme stressor, causing much difficulty in family and interpersonal relationships. Typically, the brain injured patients' social network decreases, until there is often only a few relatives in regular contact (Klonoff 1987). The reasons for this are complex and involve factors such as the change in the patient's income and physical or intellectual capacity. However, the most common factor seems to be the change in patient's personality. The greater irritability, poor temper control and social disinhibition gradually alienates those close to them. This places great pressure on family and is often the source of much family disruption and conflict (Herbert 2000).

The patient must also deal with the frustration of their disability and the limitations or loss of previous coping mechanisms. This all has an obvious effect on the patient's ability to adapt and it is not uncommon for psychological

and behavioural problems to arise or worsen after a head injury. Obviously, in relation to this current research project, alcohol abuse would be one of those problems. Patients with a head injury are more likely to experience a variety of high-risk situations which increase their chance of relapse on discharge (Langley et al 1990). These are normally situations where the person is more likely to use alcohol as a coping mechanism (eg. the emotional distress caused by a failure to adapt, interpersonal conflict caused by communication difficulties or frustration caused by cognitive impairments). Alternatively, situations the brain injured patient finds themselves in, may not be inherently stressful but may contain drinking cues. If the person has poor coping mechanisms (either pre-morbidly or as a result of their injury) it may lead to a decrease in self-efficacy and feelings of powerlessness. These negative feelings would then be contrasted with memories of the stress reducing effects of alcohol and ultimately lead to a relapse.

1.3 Traumatic Brain Injury Services in Scotland

Recent SIGN guidelines (Scottish Intercollegiate Guidelines Network 2000) on the early management of patients with a head injury, estimate an incidence of 100,000 per year attending hospital for all grades of severity of injury. One sixth of those will be admitted to hospital (330 per 100,000 total population) and 3.2 % of that figure will die (10 per 100,000), making head trauma the leading cause of mortality in people under the age of forty-five in Scotland. The number of traumatic brain injured patients in each of the fifteen health boards across Scotland is not available or the figures are inconsistent. Additionally, most of these rely on national SMR coding (Scottish Morbidity Record): ICD9 codes 800-840 (skull fractures) and 850-854 (brain injuries). A recent study in Glasgow by Thornhill et al (1997), suggested that an additional twenty percent of traumatic brain injured admissions are not recognised by SMR criteria, which implies that the actual numbers of head injured patients are substantially higher.

There is a substantial literature which suggests that problems in traumatic brain injured survivors and their families worsen over time if not addressed (Cozen et al 1992; Brooks et al 1986; Levin et al 1990) and that well timed, appropriate rehabilitation improves quality of life (Cope & Hall 1982; Brooks 1991; Pentland & Macpherson 1994; Hawley et al 2000). The Scottish Integrated Workforce Planning Group (2000) reported that due to the increase in survival rates, particularly in young people with traumatic brain injury, there was a greater need now for rehabilitation services. Patients and their families listed this as a priority, stating that they wanted improved

rehabilitation beyond the acute stage and greater availability of community care.

The services for traumatic brain injured patients throughout the UK, are patchy or inadequate (Cockburn and Gatherer 1988). They often rely on the private/ voluntary sector and patients are subject to geographical inequity of access. At present, there are only four in-patient units in Scotland (one of them in the private sector- the Central Scotland Brain Injury Rehabilitation Service) and one that specialises in patients with severe behavioural disorders of organic origin (Robert Ferguson Unit, Royal Edinburgh Hospital). There is a struggle for these four units to meet the demand of required admissions, even for severely injured patients. The earlier study by Thornhill et al (1997) also showed that, for less severely injured patients, only six percent of them access any type of rehabilitation service during the twelve months post discharge. They also found that over ninety percent are not followed up. This represents a large unmet need and given that the effects of a head injury are life long, there will be a cumulative effect and it would be anticipated that additional and unnecessary handicaps will occur.

1.4 The link between substance abuse and head injury

Many traumatic injuries leading to the use of general rehabilitation services are related to drug and alcohol use. Alcohol related traumatic injuries account for up to seventy nine percent of rehabilitation patients. Alcohol use has been reported to be involved in about thirty five percent of car accidents, fifty five percent motor vehicle deaths, forty percent of drownings and thirty

percent of non commercial airplane crashes (Applegate et al 1990). Approximately, fifty percent of head injury patients from car accidents occur with the drivers being intoxicated at the time of injury with as many as seventy two percent positive for some blood alcohol (Sparadoc and Gill 1989).

There is a well established link between substance abuse and head injury. In her review paper, Mtiguy (1991) states that alcohol was a major contributing factor in over fifty percent of head injuries sustained in the United States. Similarly, Rimel and Jane (1983) found that fifty two percent of their sample of head injured patients were intoxicated at the time of their injury. According to research by Sparadoc et al (1990) and Brismar et al (1982) up to fifty eight percent of head injured patients had positive blood alcohol levels at the time of their injury. In a study of over four hundred patients, fifty seven percent of the patients with a history of alcohol abuse were intoxicated at the time of their injury, whilst thirty one percent of those with no history of alcohol abuse were intoxicated at the time of their injury (Rimel et al 1982). More recently, a study by Delmonico et al (1998) found that twenty to sixty percent of traumatic brain injured patients had been identified as pre-injury problem drinkers, whilst a literature review by Sander et al (1997) put pre-injury alcohol abuse at forty to sixty six percent.

In one of the most comprehensive studies, The National Head Injury Foundation Professional Council (1998), surveyed 1500 traumatic head injured patients from seventy five head injury facilities across America. They found that forty percent of the patients had a moderate to severe substance abuse problem pre-trauma and another fifteen percent had a mild abuse problem. For over ninety five percent of the traumatic brain injured patients

with substance abuse problems, alcohol was the substance of choice, followed by marijuana and then cocaine.

The prevalence of alcohol abuse following a head injury is not readily known. However, most studies suggest that there is a higher than average incident of alcohol abuse amongst disabled populations in general (Rusmussen & DeBoer 1980; Heinemann 1986), with estimates of prevalence in the region of fifteen to thirty percent. There is good reason to believe that the incident of alcohol abuse is at least as high for head injury patients. In 1994 Corrigan reviewed research on the mediating effects of alcohol and other drugs on the outcome of a traumatic brain injury. They discovered that over one half of individuals with serious brain injury can be expected to be high risk for later substance abuse solely as a result of their pre-injury history. Additionally, a significant proportion of the other half are at risk of compromising their outcome for rehabilitation by the use of alcohol and other drugs. Delmonico et al (1998) support this finding, as their study revealed that between thirty and fifty percent of brain injured patients have problems with alcohol post injury. Similarly, Sander et al (1997) estimated that post injury alcohol abuse occurred in twenty seven to fifty percent of traumatic brain injured patients. The Ohio Valley Centre for Brain Injury Prevention and Rehabilitation (1997) state that approximately one third of brain injury survivors have a history of alcohol abuse prior to their injury and continue to abuse alcohol post injury. However, over twenty percent of people who do not have an alcohol abuse history pre injury, become vulnerable to alcohol abuse post injury.

1.41 The effect of alcohol following a traumatic brain injury

There is a substantial amount of evidence that demonstrates the negative effect that alcohol has on a traumatic brain injury (Delmonico et al 1998; Kaitz 1991). It has an impact on the person, through it's interaction with the cognitive and behavioural difficulties experienced by brain injured individuals and also has a direct effect at the neurobiological level.

Sander et al (1997) claim that the potential risks of drinking alcohol following a traumatic head injury include slowed recovery, diminished benefits from rehabilitation efforts, depression, an increased risk of seizure, interactions with prescribed medications and a greater likelihood of re-injury through a second traumatic brain injury. Additionally, post injury alcohol abuse is a significant contributor to poor vocational outcome (Ellerd & Moore 1992).

There are also studies suggesting an 'additive effect' on brain structure and function for substance abuse and traumatic brain injury (Bigler et al 1996). One such study by Baguley et al (1997) measured event related evoked potentials (an indication of how fast the brain detects new stimuli) and showed that there was a clear additive effect of heavy social drinking and traumatic brain injury. Those who had either of these conditions were slower responding than the people with neither, whilst those with both were slower still. Chronic alcohol abuse is also associated with further cortical deterioration and interferes with the ability of nerve endings to reconnect.

A study by Corthell and Tooman (1985) concluded that the excitatory or depressing effects of alcohol in brain injured patients are more severe and occur with smaller doses. Alcohol has a very rapid effect on the central

nervous system, disinhibiting higher cortical functions and altering mental processes more generally. However, these effects are magnified in a traumatic brain injured patient, as disinhibition is a routine consequence of many brain injuries. It has been well established that the behavioural effects of alcohol and brain injury are synergetic (Karol & Halla-Poe 1987; Elliot 1987). Mtiguy (1991) also found that traumatic brain injury patients have a significantly increased sensitivity to the effects of alcohol after their injury. So for a brain injured patient, a traumatically compromised central nervous system and poorly controlled or disinhibited behaviour, will be highly likely to co-occur.

Another common feature of head injured patients, is their difficulties monitoring the social consequences of their behaviour. The social response to highly inappropriate behaviour, caused by excessive alcohol intake, can pass unnoticed, which may mean that the head injured patient concludes that the current effects of alcohol on their behaviour is similar to that pre-injury.

There are several other factors that make traumatically brain injured patients vulnerable to alcohol related problems. These include difficulties adjusting to the disabling impact of their injury which results in stress and frustration, premorbid alcohol abuse patterns, a lack of appropriate emotional coping strategies, poor premorbid problem solving and impaired cognitive abilities.

1.42 Lack of joint service provision

There is a very high incidence rate of alcohol abuse following a head injury and a large literature documenting the significant and alarming effects that further alcohol abuse has on the head injured patient. There is also a recognition, from professionals working within the field, of a need for alcohol abuse programmes with this patient population. Heinemann (1986) refers to alcohol abuse as the 'silent saboteur' of rehabilitation and recommends that alcohol abuse should be addressed as a matter of routine in acute rehabilitation programmes. Similarly, Corrigan et al (1991) carried out a review of the area and concluded that rehabilitation professionals should incorporate substance abuse and prevention into the repertoire of services offered to patients and their families. However, an American survey of rehabilitation programmes revealed that only twenty nine percent offered any substance abuse education to patients and only twenty two percent offered any training to staff in the area (Rohe & DePomoplo 1985). More recently, an overview by Langley et al (1990) discovered that substance abuse programmes have been largely lacking to date and where present are inadequate and rudimentary. This highlights a huge unrecognised area of need which needs to be addressed. As The Ohio Valley Centre for Brain Injury Prevention and Rehabilitation (1997) found, alcohol abuse is normally not a problem in an acute rehabilitation setting but can return to its previous levels within two years and can accelerate two to five years after discharge.

Despite the well documented links between brain injury and substance abuse, patients with this complex co-occurring condition face formidable barriers in obtaining any appropriate care. This is attributable to:

- 1) Substance abuse providers not being sufficiently trained to identify or manage the cognitive and behavioural problems that patients with brain injuries present with (eg. insight difficulties, poor impulse control, memory problems) and
- 2) Brain injury providers not being sufficiently trained to identify and manage substance abuse problems. There may be a tendency to underestimate the prevalence of substance abuse problems among patients receiving rehabilitation due to a lack of understanding regarding what actually constitutes substance abuse.

When patients with traumatic brain injuries do manage to access services, particularly non-specialised, mainstream services, they face additional challenges in treatment compared to other patient groups:

- It is often easy to see their behaviour as intentionally disruptive, particularly when there are no visible signs of disability. Any frontal lobe damage may affect the regulation of thoughts, feelings and behaviour, which could promote disinhibition.
- Social rules may not be observed and interpersonal cues may not be perceived, creating consternation for fellow patients and staff.
- Their cognitive impairments may affect their communication or learning style, making participation in didactic training and groups more difficult.

- Therapeutic relationships may also be undermined as the patient's cognitive problems are misinterpreted as resistance.

As a consequence, these patients often fall between the cracks, their cases being misunderstood by service providers. At best this means they receive inadequate treatment in normal unspecialised addiction services, which obviously jeopardises their recovery. However, more likely they do not receive any input at all. Although there has not been a definitive population based study of how many patients in standard alcohol abuse programmes have received a head injury, a collection of studies over the last twenty years suggests that it may range from thirty percent (Hillbom & Holm 1986) to as high as sixty three percent (Gordon et al 2002). This not only illustrates the high rate of co-morbidity of these two problems, it also demonstrates the extent of inadequate and unsatisfactory treatment being administered.

Efforts to specifically treat individuals with residual disabilities due to traumatic brain injury and concomitant problems of substance abuse remain rudimentary. The Ohio Valley Centre for Brain Injury Prevention and Rehabilitation (1997) state that there should be a 'very high priority' placed on doing research about the effectiveness of current substance abuse treatments for persons with traumatic brain injury. However, they concede that until more is known, current treatments and services need to be adapted to accommodate disability arising from traumatic brain injury.

The National Head Injury Foundation (1998) have made recommendations for such adaptations, based on general clinical

observations and common sense. Whilst this is welcomed as an early attempt to address the problem, more empirical data and systematic attempts to address and evaluate specific treatment programmes need to be made (Kaitz 1991).

1.43 Alcohol treatment approaches in traumatic brain injury

There have been a number of published studies over the last ten to fifteen years, which have attempted to establish and evaluate alcohol treatment programmes for head injured patients. Several of the more promising ones are illustrated in the following paragraphs.

Langley et al (1990) have attempted to outline a comprehensive alcohol treatment programme for patients with traumatic brain injury. Many of the concepts they recommend in their model had not been tested or evaluated but they felt they were theoretically sound and applicable to treating alcohol abuse problems. Langley et al's paper provides a good overview of relevant factors and treatment elements. At the assessment stage they believe it is important to distinguish between those patients that have current alcohol dependence and those who were premorbid substance abusers. These patients are further placed into categories- low risk (no premorbid history of alcohol abuse), high risk (with a premorbid history) and alcohol dependent (history of tolerance and withdrawal symptoms). As there are no validated screening instruments for a traumatically brain injured population, they recommend that a criteria based interview should be used.

Once the patient has been placed in to the relevant risk category, they receive a particular pattern of intervention. These are outlined in the table below.

Components	Low risk	High risk	Alcohol dependent
Alcohol education	*	*	*
Altering alcohol beliefs		*	*
Lifestyle modification		*	*
Enhancing motivation			*
Craving reduction			*
Relapse prevention			*
Family education	*	*	*

Langley et al (1990) briefly describe the content of each of the treatment options and suggest general adaptations that could be made to facilitate engagement with the patient. The authors justify the non-provision of certain interventions to keep levels of conflict to a minimum. This, they believe, will have the best possible outcome, in terms of changing alcohol-related behaviour. Whilst Langley et al's paper is very useful for providing a general framework, there is little in the way of practical suggestions for how to modify and implement each of the components or even what the content should consist of. There has also been no systematic evaluation of components and consequently no evidence to support their inclusion. They conclude that empirical evaluation is now required to determine the efficacy of each of the components. Their paper does provide a useful starting point for stimulating ideas and considering relevant treatment factors.

Corrigan et al (1995) piloted a community based substance abuse programme, called the TBI Network, that used resource and service co-ordination as the primary method of intervention. They used interdisciplinary

staff with expertise in traumatic brain injury, vocational rehabilitation and substance abuse treatment to support and enhance the existing services in the patient's own community. There was a recognition that local providers had little training to deal with this patient group, so a case consultation approach was adopted. This case management service, they believe, should be one of the few specialised services for community integration following traumatic brain injury. They specify three tiers of service- core, supplemental and direct, all of which should be supplied to the patient and their family.

The involvement with the patients was holistic, considering all problems of community integration, not just those directly related to substance abuse or traumatic brain injury. They argued that the best way to accomplish and sustain positive substance abuse and vocational rehabilitation outcomes was to stabilise and maximise all areas of life functioning. Their programme sought to overcome the difficulty of generalisation of skills. They considered all patients eligible for treatment, particularly focusing on those who were denied treatment by existing substance abuse providers because of a denial by the patients that they had alcohol problems. These statements of denial were then used as the target for treatment and Prochaska and DiClemente's Stages of Change theory was used as the basic model, whilst motivational interviewing used as the method of enhancing motivation.

Once motivation had been achieved, the main psychological intervention provided to patients, was psycho-education in a group format. The aim was to confront patient's beliefs, in a non-threatening environment, with information about alcohol and other drug use following traumatic brain injury. They acknowledged the need to adapt the intervention due to cognitive

impairments and employed a number of strategies such as repetition and review, visual aids, role-play and mnemonics. They evaluated the treatment using a 15 question true or false questionnaire and the SOCRATES (Stages Of Change Readiness and Treatment Eagerness Scale) questionnaire.

Corrigan et al found that there was a huge demand for their service, based on the number of referrals made and the number of patients who chose to receive services. Due to the short duration of the programme they couldn't state what the final outcome effectiveness was, although based on clinical impressions and programme evaluation results, they felt that important changes in behaviour were occurring. They believed that the innovative aspects of their programme were using the 'stages of change' model to engage the patient and identifying and managing the community teams.

Bogner et al (1997) monitored seventy-two traumatic brain injured survivors for a year as they participated in Corrigan et al's TBI Network. They found that these patients had significantly improved vocational status and increased rates of abstinence. There was greatest improvement in those who had been referred within three months post injury.

Two recent studies by Bombardier and Rimmele (1999) and Cox et al (2003) employed a brief Motivational Enhancement approach, on an individual basis, to acute inpatients. They found that those who participated in the programme had significantly reduced levels of drinking behaviour at follow up, a year later.

Delmonico et al (1998) ran a group psychotherapy programme for inpatients and outpatients, which used the 'harm reduction' philosophy as its basis. Harm reduction is a set of strategies and tactics that encourage alcohol

abusers to reduce the harm done to themselves and others by their alcohol abuse. It doesn't seek to remove a person's primary coping mechanisms until others are in place. The goal is to start where the person is and reinforce any positive changes with a bias to promoting ego building instead of ego breaking. Any reduction in alcohol-related harm and an increase in making healthy choices is considered a success. The group was facilitated by a rehabilitation psychologist with expertise in substance abuse and brain injury. The group was interpersonal in nature, with a strong emphasis on raising awareness of alcohol related problems and patterns and developing relapse prevention and coping strategies. The group members were given written didactic materials and encouraged to take notes during the sessions. The authors describe a number of treatment success indicators, such as fewer emergency calls for alcohol abuse health problems, reduced clinic visits and increased stability in relationships and housing. However, the authors don't offer any empirical support for their conclusions.

1.44 Summary of current treatment approaches

As can be seen from the preceding studies, attempts are being made to address the problem of alcohol abuse following head injury, although these are at a very preliminary stage. General guidelines have been made available through the National Head Injury Foundation (1998), whilst Langely et al provide a good over view and possible framework. Their concluding suggestion was to refine and evaluate each of the individual components for efficacy and validity. Corrigan et al have made a start on this by evaluating a

psycho-educational group and individual motivation enhancing intervention, with some success. Two further studies based around motivational enhancement therapy have also found favourable results (Bombardier and Rimmele; Cox et al). Delmonico et al present a skilled based group intervention that draws more on the relapse prevention model. It is clear though, that a large amount of work still needs to be done on developing and evaluating appropriate programmes for patients with the co-morbid difficulties of brain injury and alcohol abuse.

1.45 Lothian based alcohol services

At present there are no alcohol treatment services available specifically for patients with a traumatic brain injury in NHS Lothian. If the patients receive services they will either be seen through:

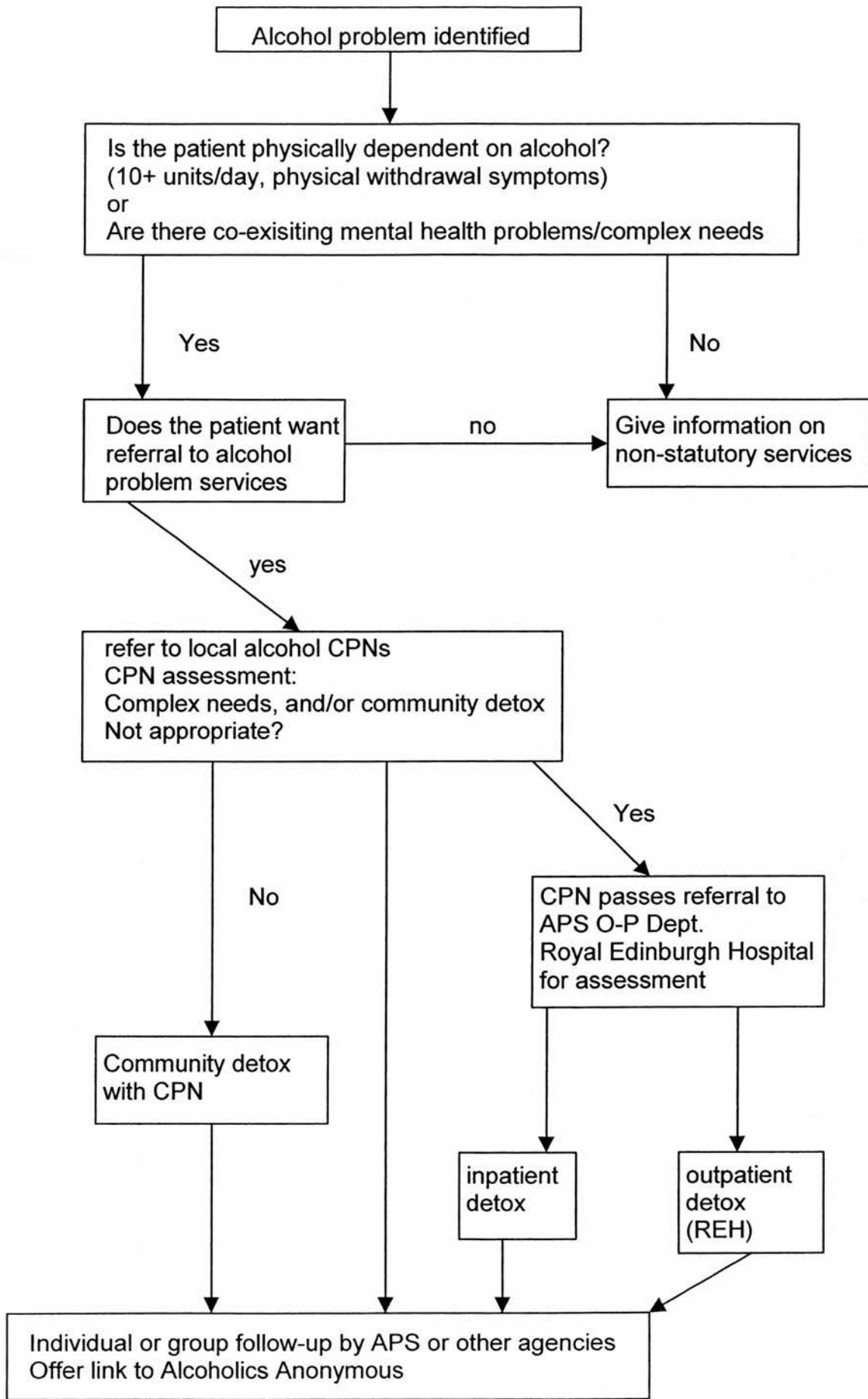
- a) one of the two head injury services: The Charles Bell Pavilion, Astley Ainslie Hospital or the Robert Ferguson Unit, Royal Edinburgh Hospital or
- b) The Lothian Alcohol Problems Service.

As stated earlier, the demand for inpatient admissions to the head injury services in Lothian is very high and the patient would need to be referred for more complex rehabilitation, than just alcohol abuse.

The Lothian Alcohol Problems Service consists of local CPNs, Consultant services, a central Out-Patient Therapy Team and the In-Patient Assessment and Detoxification Unit. Initial referrals from primary care are

made to local alcohol specialist CPNs. Referrals from secondary care are made to the APS Out-Patient Department (Royal Edinburgh Hospital). The referral pathway from primary care is outlined in the diagram below (taken from NHS Lothian, Working with people with alcohol related problems 2004).

There are a number of non-NHS services available for individuals with alcohol problems. These include Alcoholics Anonymous, West Lothian Drugs and Alcohol Service, Edinburgh and Lothian Council on Alcohol, LIBRA and the Edinburgh Homelink Team. There are of course private clinics in Lothian, which offer an alcohol abuse treatment programme, either individually or in group format. A patient can apply for NHS funding, to Lothian Health, to attend one of these clinics. However, they must first be assessed by one of the specialist NHS consultants who reviews whether all NHS treatment avenues have been tried and/or considered. As described earlier, these treatment approaches may not be an appropriate tool for many traumatic brain injury survivors, as there is need for modification and additional support to make them effective, which is generally not acknowledged or available.



1.46 Inpatient alcohol rehabilitation programmes

At first glance there appears to be a strong argument for not including inpatients in a rehabilitation programme. After all, the patients will be unable to practice the skills (eg. drink refusal) learnt in the hospital setting, unless they are on regular pass from the ward. There is also a challenge to the external validity of any programme, as there will be little similarity between the two settings (ie. hospital and home) and consequently little carry over or generalization. Evidence suggests that skills need to be consolidated in as ecologically similar an environment as possible for maximum impact to be achieved (Howells 2000). Individual adjustments have to be made for that persons' home living arrangements and the intervention incorporated as part of their daily routine. There is also the importance of involving family as part of the programme as natural and probably longer term co-therapists.

Most of the rehabilitation programmes for alcohol abuse, that have been suggested in the past, have presumed protracted inpatient or residential treatment that is no longer available to most persons with traumatic brain injury. A number of more recent studies have illustrated the benefit of addressing patient's alcohol problems as quickly as possible, in the more common, acute rehabilitation setting.

Bombardier & Rimmele (1999) recommend brief interventions based on motivational interviewing techniques and have been able to successfully demonstrate a reduction in their patient's alcohol use after traumatic brain injury. They administered a brief motivational interview intervention to a group

of twelve TBI patients and found that at one year follow up from discharge, eighty nine percent of these patients reported drinking no alcohol during a typical week. This was in comparison to a control group, consisting of alcoholic patients, of whom fifty five percent reporting not drinking during a typical week. An obvious flaw with the study was that they had only nine patients in their sample, so the results should be treated with some caution. Cox et al (2003) also found some support for a Structured Motivational Counselling intervention for acute inpatients.

When Bombardier et al (1997) surveyed the readiness to change alcohol use in a group of fifty traumatic brain injured patients in an acute rehabilitation ward, they found that eighty percent were in the contemplation or action stage of change. Compared to a general medical sample of heavy alcohol users, the brain injured patients showed a higher readiness to take action and change drinking behaviour. It was also found that in the brain injury sample, a positive history of alcoholism, involvement of alcohol in the accident and a higher frequency of alcohol use were associated with higher contemplation and therefore higher readiness to change.

These results reflect a trend that is consistent with other studies, in which a spontaneous change in drinking behaviour is found to occur in those who are not institutionalised after their accident (Kreutzer et al 1990). The prevalent hypothesis is that there is a period of contemplation about alcohol use amongst the problem drinkers, post injury. Katz (2005) believes this may indicate that there is a window of opportunity which could be used, in an acute inpatient rehabilitation setting, to motivate patients to abstain or cut down on their alcohol use.

Corrigan et al (1994) have found a similar pattern in their community based model for substance abuse treatment. Their patients were recruited whilst inpatients, then followed up in the community with education packages, intensive case management and inter-professional consultation. The programme evaluation data suggests significant differences in outcome depending on whether discharge occurred before an eligible patient could be engaged in treatment (eligible but untreated), after initiation of treatment but before treatment goals could be met (premature termination) or upon mutual agreement with staff that goals had been met (treated). Unsurprisingly, the first two groups fared the worst whilst the last group scored significantly higher and more positively on eventual outcome measures.

It's acknowledged that relapse prevention skills would be best consolidated by future repetition of the programme and the opportunity to practice them in actual, more familiar, real world settings. Despite this, there is no reason why patients shouldn't start to learn how to deal with relapse issues when they are still an inpatient. This is particularly true given the evidence and success of the studies just outlined and the increasing move away from long term institutional care. The acute rehabilitation period may also represent a window of opportunity to build the momentum for change by implementing secondary prevention programmes. Also, teaching relapse prevention skills before the patient leaves hospital makes sense, given the correlation between feelings of low self-efficacy and inadequate coping ability and alcohol relapse. Equipping the patient with skills before they leave should theoretically protect them from relapse and give them added confidence in their ability to adjust to their life post discharge. Additionally, from a practical point of view, an acute

setting is a period when a large number of head injured patients are readily available to receive information and intensive rehabilitation. The patient and their relatives are in daily contact with health care professionals and there are no practical barriers to prevent frequent therapeutic sessions, such as difficulties with patient transport.

1.47 The relapse prevention intervention programme

As can be seen from the preceding review, there have been a number of attempts to establish and evaluate effective treatment programmes for head injured patients, who have difficulties with alcohol following discharge from an acute hospital setting. Cox et al (2003,) Bombardier and Rimmele (1999) and Corrigan et al (1994) all used Motivational Enhancement Therapy as their treatment of choice. This treatment strategy is based on Prochaska and DiClemente's Transtheoretical Stages of Change model, which is considered one of the most influential and useful when trying to help patients abstain from drinking.

However, the other main influential model is that proposed by Marlatt and Gordon (1985). This model has formed the basis of all the Relapse Prevention interventions. These interventions treat lapses as a normal part of the treatment process, with the aim being to learn from the lapse episode, equipping the patient with skills to manage the same situation more effectively next time it occurs. Marlatt and Gordon's model provides a framework for analysing relapse episodes and aims to raise feelings of self-efficacy by teaching new coping skills. They propose that the patient needs to be

empowered with new coping skills, not just motivated to cut down on their drinking. Despite all the research evidence indicating that low self-efficacy is predictive of relapse (Annis and Davis 1988) and the relevance that a relapse treatment programme would have, it has not received the same attention as the Motivational Enhancement interventions.

Consequently, I wanted to examine the efficacy of implementing a secondary treatment programme based on a relapse prevention model. This programme would capitalise on that window of opportunity that seems to occur for patients after their traumatic brain injury, whilst they are still inpatients, in which they contemplate making a reduction in their alcohol use (Bomardier et al 1997). A review of the literature revealed a number of possible relapse prevention manuals, which would act as the treatment protocol for this study (eg. Gorski 2001). However, in the end the manual by Warnigaratne et al (1990) was chosen, as it was one of the few designed for use with individual patients rather than just groups. I tailored a brief intervention, based on the framework and using the content of Warnigaratne et al's treatment manual and made adaptations for the cognitive impairments typically experienced by a brain injured patient group.

1.48 Measuring intention to change

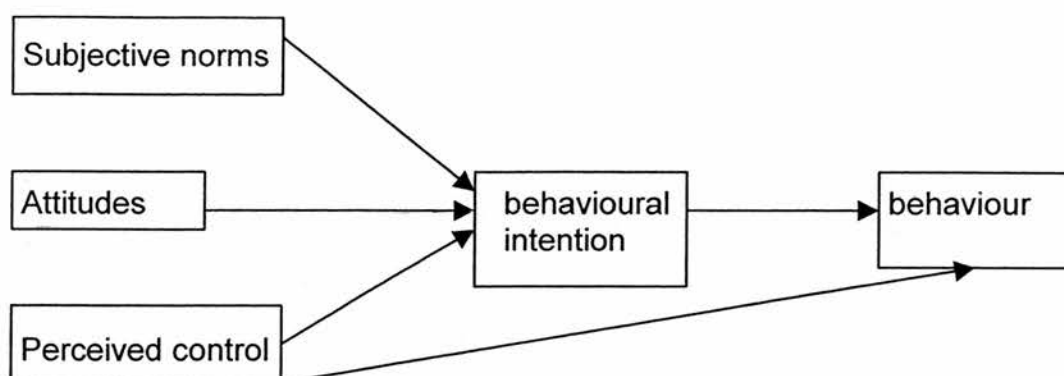
As there was a restriction on the time available for this study and only a few of the participants were due for discharge from hospital, it was not possible to use a longitudinal design to gather data on the potential changes in drinking behaviour. Instead the efficacy of the study had to be established by measuring the participants' intentions to change their behaviour. Whilst it is

acknowledged that intention to change does not necessarily mean that change will take place, it was considered a viable compromise in the circumstances.

Edelmann (1994) states that whether or not someone practices a particular behaviour is influenced by social, emotional and cognitive factors. Two theories of lifestyle change that have been influential in predicting this process are Ajzen and Madden's (1986) theory of planned behaviour and Becker's (1974) health belief model. For the purposes of this study the former of these theories was chosen as the structural basis for measuring change. This was due to the theory of planned behaviour being slightly simpler in terms of number of components and because the health belief model includes components that have no standardised method of measurement eg. 'perceived susceptibility' or 'seriousness'. Additionally, there has been some research supporting the utility of the theory of planned behaviour (Manstead et al 1983; Wurtele and Maddux 1987).

1.49 Theory of planned behaviour

The basic principle behind this theory is that most of our behaviour is under our voluntary control and is guided by intentions. Intentions are influenced by our attitudes towards that behaviour, the subjective norms about the appropriateness of it and our perceived control over the target behaviour.



Theory of Planned Behaviour

Subjective norms refer to our beliefs and knowledge of what other people think is appropriate (ie. normative beliefs). They reflect our expectations of the outcome of engaging in the behaviour. Our attitude, is our motivation to comply with these norms and our perceived control refers to a concept similar to Bandura's self-efficacy (1977).

For the purposes of this study, measures were chosen that tapped into these components in relation to alcohol and drinking. These were administered before and after the participant's involvement in the alcohol relapse prevention treatment programme. The measures were used to predict whether the use of such a programme could significantly lower the potential risk of alcohol relapse by changing participant's behavioural intentions. There are four individual hypotheses being tested:

1.5 Experimental Hypotheses

- 1) There will be a significant increase in participant's sense of self-efficacy following participation in the treatment programme compared to the control participants
- 2) There will be a significant increase in participant's motivation to abstain from drinking alcohol following participation in the treatment programme compared to control participants
- 3) There will be a significant difference in participant's knowledge and expectations of the effects of alcohol following participation in the treatment programme compared to control participants
- 4) There will be a significant increase in participant's intention to change their drinking behaviour

2.0 Method

2.01 Design

This is an exploratory study composed of between and within group designs.

- Firstly, a between subjects design was used to compare the mean 'difference' scores on the three questionnaires administered, between the treatment group and the control group. Treatment effectiveness was evaluated by comparing the scores on three validated measures, examining participant's knowledge of the effects of alcohol, motivation to change drinking behaviour and perceptions of control over drinking.
- Secondly, the ten treatment participants were subject to a within subject design, using the repeated measures, administered pre and post intervention. This study examined not just the absolute and statistically significant differences in scores, between the treatment and control participants but also the clinical significance of any change, in relation to the performance of individual patients in the treatment group. This was achieved by examining the degree and impact of change within the group, at the end of the intervention by noting whether the treatment participants' scores differed markedly from their pre treatment scores. The treatment participant's data was also explored qualitatively using information from the session feedback questionnaires, demographic data and neuropsychological data.
- There was also an explorative investigation of the correlational data to determine any potentially useful relationships between the outcome measures and the feedback questionnaires.

2.02 Participants

Twenty participants were involved in this study, ten in the experimental group and ten in the control. The size of the study was informed by a statistical power calculation. A large effect size was predicted, based on similar previous studies (Corrigan et al 1995; Delmonico et al 1998) and on the brief intervention literature for alcohol problems (Bombardier & Rimmelle 1999; Cox et al 2003). Additionally, a lot of the variance was reduced due to the population being very homogeneous and repeated measures being used. Assuming a large effect size, as defined by Cohen (1992) and taking the alpha level as 0.05 for a one tailed test, then for a repeated measures t-test, power would be attained with a sample size of ten. Cohen defines a large effect size for an independent samples t-test as 0.8. To obtain the equivalent for a repeated measures t-test, 0.8 is multiplied by the square root of two to equal 1.13 (Cohen 1988 Table 2.4.1)

The mean age was 41 years (s.d.= 13.24, range= 20-63) and 17 men and 3 women were included.

Participants were randomly assigned to either group using the randomisation procedure recommended by Coolican (1994, Table 1 Appendix 2, p448), in which each participant is allocated a number 1-20. Using this table and moving horizontally, the first ten participants were assigned to the experimental group, whilst the remaining ten were assigned to the control.

All participants were recruited from neuro-rehabilitation wards at two different hospitals. Each participant was already an inpatient and permission

for their involvement was sought from the relevant Consultant at each hospital.

Ethical approval was granted by the Lothian Local Research Ethic Committee (Appendix 1). The main ethical issues considered are outlined below:

- Confidentiality: It is conceivable that participants could be 'traced' through incidental information. To counteract this, such information was omitted or anonymised. Particulars such as place of residence, schools or family set etc. were not disclosed. Each participant was assigned a number and this was the only identifying information included on the questionnaires. All information was kept within a locked filing cabinet, in the hospital.
- The initial lack of control group involvement: Due to limited resources, particularly the availability of a trained therapist, there has to be a distributing order in which participants were seen. As this study was a clinical initiative, it was anticipated that the participants in the control group would eventually be offered the same intervention as the experimental group.
- Participants may have felt unable to withdraw from the study due to the pressure inherent being an inpatient and the likelihood of continued incidental contact with the principal researcher. However, each participant in the experimental group was given the opportunity to raise any objections after each session, as part of that session's feedback. Although their written comments were kept anonymous until the end of the intervention, it did provide an opportunity to discuss any concerns.

Additionally, each patient had a named nurse, who could indirectly raise concerns, on the participant's behalf, to the researcher.

- The intervention procedure was an extension of the clinical relationship between the patient and the researcher. This may have led to a conflict of interest. However, the opposite situation arose, in which the degree of trust and collaboration already established, helped facilitate more effective intervention and debriefing sessions.
- Comprehension difficulties: Several participants had impaired receptive and expressive communication abilities, which may have limited their understanding of the nature of the research study. To counteract this, advice was sought from the Units speech and language therapist and communication aids used accordingly. Additionally, each patient had a neuropsychological profile available for reference and adaptations were used as required.
- Consent: Each participant's involvement in the study, was within the context of an individualised, goal orientated rehabilitation programme. Their continued inpatient stay on the rehabilitation ward involves their agreement to work towards the goals set by the rehabilitation team. It is the team's duty of care to identify and address specific areas of need that patients have, in order to maximise their recovery. As alcohol abuse is often a significant factor in the eventual outcome of a patient's rehabilitation, relapse prevention would be considered an important aspect of their programme. Permission for their involvement was either sought from their Consultant Neuropsychiatrist or their Consultant had referred them into the programme. Additionally, each participant was supplied with

a consent form and information sheet (Appendix 2) and was given a week to decide if they wished to participate in the research. The participant's named nurse was present when they were being recruited for the study, in order to help clarify any issues that may have arisen later in the week. The participant's were also encouraged to discuss their decision with members of their family.

- As with any psychological therapy, there was the possibility for patient distress. The principal researcher was available for debriefing throughout the trial and the subsequent months following the end of the study. Each patient had also been assigned their own clinical psychologist, who has no involvement with the research and with whom the participant already had weekly contact. The focus of the psychotherapeutic intervention is educational and skills based, not exploratory and self reflective, so little distress is anticipated.

The principal inclusion criteria for each participant were:

- experience of a head injury at least one month prior to the relapse prevention programme beginning
- previous history of alcohol abuse or alcohol use being a significant factor in the acquisition of their head injury as defined in their medical records.
- staff identifying alcohol relapse prevention as an important part of the participant's ongoing rehabilitation needs
- currently a hospital inpatient
- able to sit, individually, with the principal researcher for a duration of 30 minutes.

Exclusion to the study was based on the participant's level of cognitive functioning. Entry to the programme depended on the participant meeting minimum levels of functioning in the areas of executive ability, memory impairment, verbal comprehension and reading.

2.03 Measures

All measures are included in Appendix 3.

- **Alcohol Abstinence Self-Efficacy Scale (AASE)**

This scale, developed by DiClemente et al (1994), assesses an individual's efficacy (ie. confidence) to abstain from drinking in twenty situations that represent typical drinking cues. The scale is modelled on Bandura's (1977) self-efficacy construct and its application to Marlatt and Gordon's (1985) relapse prevention model for addictions.

The twenty situations comprise of four five item sub-scales, examining cues related to negative affect, social/ positive, physical and other concerns, and withdrawal and urges. Additionally, these items can be assessed to evaluate an individual's temptation to drink, providing a measure of cue strength to relate to the efficacy evaluation. Both efficacy and temptation are rated on a five point Likert scale ranging from 'not at all' to 'extremely'. Participants are asked to give a current measure of efficacy and temptation. The AASE consists of twenty efficacy and twenty temptation questions, which take about ten minutes to complete. A study conducted with 266 adults in treatment at an outpatient treatment programme for alcohol use disorders over a twenty four month period found strong indices of reliability and validity for this scale (DiClemente et

al 1994). There is good evidence for the internal consistency and construct validity of the AASE, which has been used in large scale programmes such as the Project MATCH (Project MATCH research group 1997). Internal consistency values for the AASE ranged from .82 to .92 for the self-efficacy subscales and from .60 to .99 for the temptation sub-scales. It was normed on outpatient substance abusers. It is recommended for use in individualising treatment plans and in assessing possibilities for relapse and relapse prevention (Allen & Columbus 1995).

- Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) Version8

This is nineteen item questionnaire, developed by Miller and Tonigan (1996), is designed to assess motivation for change in alcohol abusers. It consists of three sub-scales: Recognition (RE), Ambivalence (AM) and Taking Steps (TS). Version 8 is a reduced item scale based on factor analysis with prior versions, with the shorter form developed using the items that most strongly marked each factor. The 19 item scale scores are highly related to the longer 39 item scale for Recognition ($r = .96$), Ambivalence (.88) and Taking Steps (.94). The British Psychology Society's (BPS) Centre for Outcomes Research and Effectiveness (CORE) evaluated the use of outcome measures in addiction work and rated the SOCRATES very highly in terms of psychometric properties, ease of administration and content (BPS 2002) The psychometric properties of the scale are very good. Cronbach's alpha for the three sub-scales ranged from .83 to .96, while test-retest reliabilities ranged from .83 to .99.

- Alcohol Effects Questionnaire (AEFQ)

This questionnaire is a revision and extension of the Alcohol Expectancy Questionnaire by Brown et al (1980). Allen and Columbus (1995) state it to be the 'most widely used alcohol expectancy measure in both research and clinical settings'. It was developed as a brief method of assessing both the positive and negative effects people expect alcohol to have on themselves. It has several advantages over Brown et al's (1980) earlier version as it is briefer (having only 40 items rated true or false); it assesses both the undesirable as well as the reinforcing effects of alcohol and assesses only personal beliefs rather than mixing personal with general beliefs ie. beliefs about the effects of alcohol on oneself, not about the effects of alcohol on people in general.

The AEFQ is composed of eight factors reflecting personal beliefs about the anticipated effects of alcohol. These are: Global Positive (POS), Social and Physical Pleasure (SPP), Sexual Enhancement (SEX), Power and Aggression (AGG), Social Expressiveness (SOC), Relaxation and Tension (REL), Cognitive and Physical Impairment (IMP) and Careless Unconcern (CU).

The AEFQ has demonstrated favourable reliability, with good internal consistency (Cronbach's alpha ranged from .49 to .74 for the eight subscales) and good validity (Rohsenow 1983). The constructs correlate positively with Alcohol Dependence. (Brown et al 1987; Christiansen et al 1989; Smith et al 1995). It does well at predicting both current and future drinking practices and also retention in treatment and post treatment relapse (Smith et al 1995).

- A non validated session feedback questionnaire (example in appendix 4)

These were adapted from the feedback questionnaires suggested for use by Wanigaratne et al (1990).

Each of the questionnaires was adapted for this head injured population by including an analogue scale aided by descriptive histograms (see appendix 5). This system was developed by Helsel and Matson (1991) and described by Lindsay (1991). It was originally used with a mild learning disabled population, who have utilised it consistently and in a way which appears to relate to other peoples' description of the variable being measured.

2.04 Procedure

A standardised and validated alcohol relapse prevention programme (Wanigaratne et al 1990) was adapted for use with a brain-injured population to compensate for cognitive deficits. Wanigaratne et al's (1990) programme is based on the cognitive behavioural model of relapse prevention proposed by Marlatt and Gordon (1985).

The cognitive deficits experienced by the brain injured participants included memory problems, executive functioning difficulties, slowed information processing, comprehension and reading difficulties. The programme was adapted using techniques familiar in the brain-injury literature (Malia et al 1997). All the information included in Wanigaratne et al's (1990) programme was included in the adapted intervention, except in a different format or in a different modality that was sensitive to the brain injured participants' needs (appendix 6 includes the handouts from each session).

The techniques used to adapt the programme included using external memory strategies such as simplified session handouts, giving written and visual prompts and each participant keeping their own record of session content in a folder, which they were prompted to refer to between sessions. The internal memory strategies used were rehearsal, repetition, chunking, using mnemonics and categorising the information. An error free learning approach was adopted, as this has proven efficacy with brain injured populations (Wilson 1996). To compensate for executive functioning difficulties, each session was structured using a visual, pictorial agenda (similar to the procedure of agenda setting in CBT); all information was simplified, reduced in complexity and broken into smaller steps; complex concepts were depicted visually; participants were asked to verbalise tasks aloud and 'card sorting' tasks were introduced to replace didactic learning tasks. There was also greater emphasis placed on using role plays, as Howells (2000) states that repeated practice and role play are the two most important strategies to use with individuals with any form of intellectual impairment, if sufficient carry over and application is to be achieved.

There were two separate participant groups, a treatment and a control, with ten participants in each group. Both groups consisted of participants with brain injuries. All participants were assessed using the same assessment battery, at the same time points, pre and post intervention (pre and post was approximately seven weeks apart). This assessment consisted of a questionnaire examining knowledge of the effects of alcohol; a motivation to change questionnaire and a self-efficacy abstinence questionnaire (Appendix

3). Assessment took approximately twenty minutes on each occasion, depending on the capabilities of individual participants.

The control group had no other input in the research apart from assessment. An important ethical requirement of using these participants as controls, was to ensure that they had the option of participating in the relapse prevention programme once the study was finished.

	Week1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
Treatment	Assess	Therapy session 1	Therapy session 2	Therapy session 3	Therapy session 4	Therapy session 5	Therapy session 6	Therapy session 7	Assess and debrief
Control	Assess	Treatment as usual							Assess and debrief

The ten participants in the treatment group were seen individually for seven sessions of relapse prevention with one session per week, each lasting approximately 30 minutes. The content of the sessions consisted of:

Session 1: Getting started/ Pros and cons

Session 2: Relaxation/ anxiety management

Session 3: High risk situations

Session 4: Thought processes in relapse

Session 5: Life style imbalance

Session 6: Assertion/ drink refusal

Session 7: Problem solving

Each session was run using the established structure and content recommended by Wanigaratne et al (1990). At the end of each session a brief feedback sheet was given to the treatment participants. This data was not examined until the end of that individual's participation in the programme.

In addition to the intervention sessions, the participants had an initial assessment and introductory meeting before therapeutic session one and an assessment and debriefing session after the final therapeutic session. All assessment data was stored in a locked filing cabinet, within a lockable room, at the hospital.

After the analysis of the questionnaire data, treatment participant's medical notes were accessed to gather any qualitative information, such as neuropsychological test results.

3.0 RESULTS

3.01 Overview of Analysis and Presentation

SPSS (Statistical Package for Social Science v.10.1 for Windows) was used for the statistical analysis. The data set was examined using Shapiro-Wilk tests (as there were fewer than 50 participants in the sample) and was found not to differ significantly from a normal distribution. As the data satisfies parametric assumptions, parametric tests were used throughout the analysis.

Brief demographic details for the treatment participants and control participants are provided. T-tests were used to test for variance where necessary.

The results are presented with each hypothesis examined in turn. Comparisons of the mean change in scores pre and post intervention, between the treatment and control participants were performed (using independent samples t-tests). Comparison of means (paired t-tests) were also used to identify outcomes within groups, comparing pre-intervention with post-intervention. One tailed t-tests were used for the analysis, as the hypotheses were directional (Mohr 1990). Effect size is used as an additional measure to illustrate the informational yield provided beyond statistical significance. Kazdin (1998) recommends using effect size as a supplementary method of conveying the magnitude of differences between two experimental groups. He states that this is particularly important, when carrying out clinically relevant research, in which the applied importance of the effect should supersede statistical evaluation. A multivariate analysis is used to test hypothesis four.

The exploratory section presents Pearsons' correlations examining relationships between outcome measures and the session feedback

questionnaires. Mean rating scores for each individual session are examined for usefulness and applicability.

3.02 Sample demographics

Twenty participants were randomly assigned to either the treatment group or the control group, using the randomisation procedure recommended by Coolican (1994, Table 1, Appendix 2, p448).

There were 10 males in the treatment group and no females, whilst there were 7 males in the control group and 3 females (Table 1).

Table 1. Gender distribution- treatment and control groups

Group	Male	%	Female	%	Total
Treatment	10	100	0	N/A	10
Control	7	70	3	30	10

The ages ranged between 20 and 63 for the treatment group participants and between 23 and 54 for the control group participants (Table 2). The mean age for the treatment group was 44.2 years (s.d.=16.1) and the control participant group's was 37.8 years (s.d.= 9.4). These differences were not statistically significant ($t= 1.086$, $p= 0.292$).

Table 2. Age and sex distribution- treatment and control groups

Group	Gender	Number	Age			
			Mean	SD	minimum	maximum
treatment	Male	10	44.2	16.1	20	63
	Female	0	N/A	N/A	N/A	N/A
	Total	10	44.2	16.1	20	63
control	Male	7	37	11.1	23	54
	Female	3	39	7.0	34	44
	Total	10	37.8	9.4	23	54

The severity of participant's head injury was established using their scores on the Glasgow Coma Scale (GCS), which had been measured and recorded on admission to hospital following their injury. The GCS scores from 3 to 15, with a lower score indicating a severe head injury and a high score indicating a mild injury. The treatment group had a mean of 7.12 out of 15, with a standard deviation of 4.12, whilst the control group had a mean score of 5 out of 15 and a standard deviation of 2.73. The difference between means was not significant ($t= 1.013$, $p= 0.33$). The range of scores was greater within the treatment group, 3 to 13 compared to 3 to 8 in the control group.

Table 3. Severity of Traumatic Brain Injury- treatment and control

Group	Severity of traumatic brain injury (GCS 1-15)			
	Mean	SD	Minimum	Maximum
Treatment	7.12	4.12	3	13
Control	5	2.73	3	8

The mean time elapsed since injury was a mean of 11.12 months for the treatment participants (s.d.= 15.2) and 17.1 months for the control participants (s.d.= 10.74). The difference in means between the groups was not statistically significant ($t= 0.87$, $p= 0.4$).

Table 4. Time since injury (months)- treatment and control

Group	Time since injury (months)			
	Mean	SD	Minimum	Maximum
Treatment	11.12	15.2	2	48
Control	17.1	10.74	2	30

Based on the above findings, the two groupings of participants were judged to be similar.

3.03 Hypothesis one: There will be a significant increase in participants' sense of self-efficacy following participation in the treatment programme compared to the control participants

This hypothesis was evaluated using the Alcohol Abstinence and Self-Efficacy Scale (AASE). This scale assesses an individual's efficacy to abstain from drinking in twenty situations that represent typical drinking cues. Additionally, these situations can be assessed to evaluate an individual's temptation to drink. This provides an idea of cue strength to relate to the efficacy evaluation. The questionnaire provides two scores for comparison, pre and post intervention: self-efficacy and temptation.

Differences between treatment and control groups

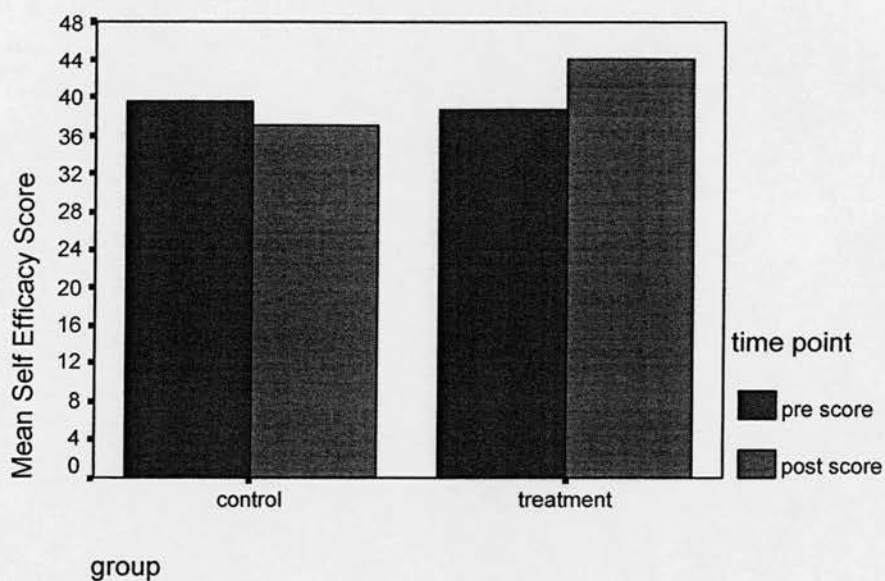
The graphs (1 and 2) illustrate similar mean AASE: self-efficacy scores pre-intervention for the treatment participants ($m = 38.8$, $s.d. = 7.49$) and control participants ($m = 39.5$, $s.d. = 11.41$). The mean AASE: self-efficacy score for the treatment participants following the intervention ($m = 44.1$, $s.d. = 9.66$), is in the direction predicted being slightly higher compared to control participants ($m = 37.0$, $s.d. = 13.72$).

The graphs illustrate that mean AASE: temptation scores are higher, pre-intervention for the treatment participants ($m = 40.4$, $s.d. = 16.73$) compared to the control ($m = 29.7$, $s.d. = 10.89$). Following the intervention the mean AASE: temptation scores are very similar between treatment

participants ($m = 32.3$, $s.d. = 14.33$) and control participants ($m = 28.4$, $s.d. = 9.31$).

Mean Self Efficacy Score for both groups:

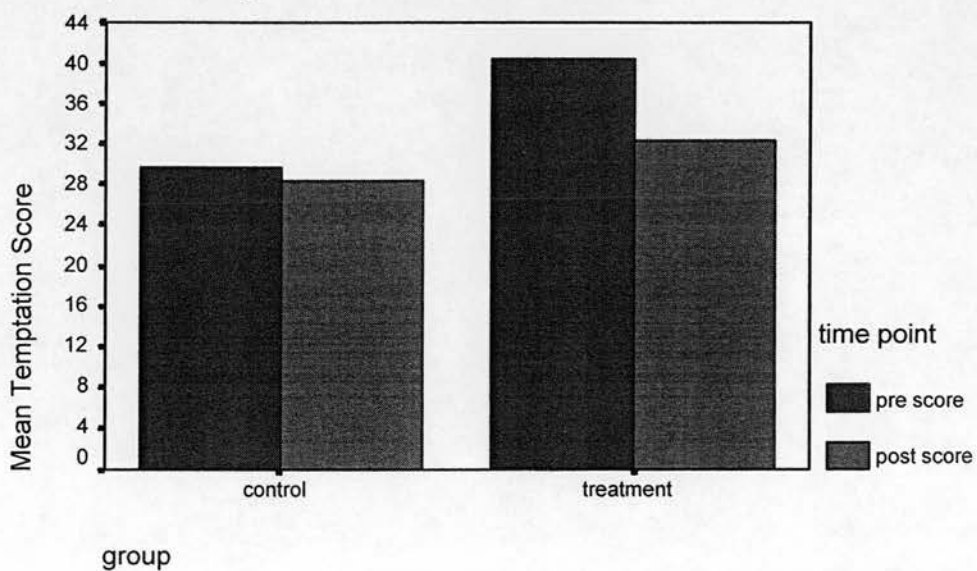
pre and post intervention



Graph 1.

Mean Temptation Score for both groups:

pre and post intervention



Graph 2

To evaluate whether a change has taken place in AASE: self-efficacy scores after the intervention, a mean 'difference' score for each group was calculated and then compared. Each of the individual participants' pre intervention scores was subtracted from their post intervention scores to give their individual 'difference' score. For each group these were summed and the means taken. A comparison was then made between the two groups' mean 'difference' scores at the end of treatment.

Post intervention the treatment participants' mean AASE: self-efficacy score was 44.1 (s.d.= 9.66), whilst their pre intervention score was 38.8 (s.d.= 7.49). This is a mean 'difference' score of 5.3 (s.d.= 12.1). The control participant's pre intervention score of 39.5 (s.d.= 11.41) was subtracted from the post intervention score of 37.0 (13.72) to give a 'difference' score of -2.5 (s.d.= 10.6). The overall difference between these two means was 7.8. However, there was no significant difference between the two group's mean 'difference' scores on self-efficacy post intervention ($t= 1.532$, $p= 0.071$) (table 5.).

Table 5. Means, standard deviations and between group comparison of means, for self-efficacy and temptation scores pre and post intervention

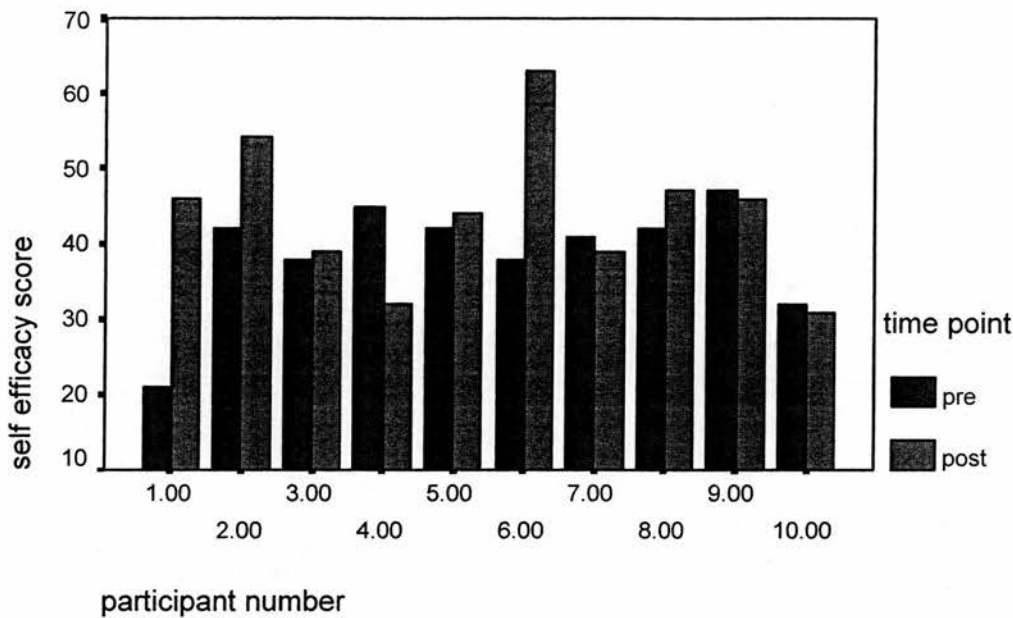
variable		treatment		control		t-test				
		Mean (s.d.)	Mean diff. (s.d.)	Mean (s.d.)	Mean Diff. (s.d.)	Mean diff.	t (df)	P (one tailed)	CI 95%	Sig?
Self efficacy	Pre	38.8 (7.49)	5.3 (12.1)	39.5 (11.41)	-2.5 (10.6)	7.8	1.532 (18)	0.071	-2.89 18.49	NS
	Post	44.1 (9.66)		37.0 (13.72)						
Temp.	Pre	40.4 (16.73)	-8.1 (8.35)	29.7 (10.89)	-1.3 (11.24)	-6.8	1.532 (18)	0.071	-16.1 2.5	NS
	post	32.3 (14.33)		28.4 (9.31)						

The same approach was used for evaluating change in scores, following the intervention, for the AASE: temptation scale. The treatment participants' mean 'difference' AASE: temptation score post intervention was -8.1 (s.d.= 8.35) and the control participant's mean 'difference score was -1.3 (s.d. = 11.24). There was no significant difference between the two groups' mean 'difference' scores on temptation post intervention ($t= 1.53$, $p= 0.071$).

Within subjects analysis

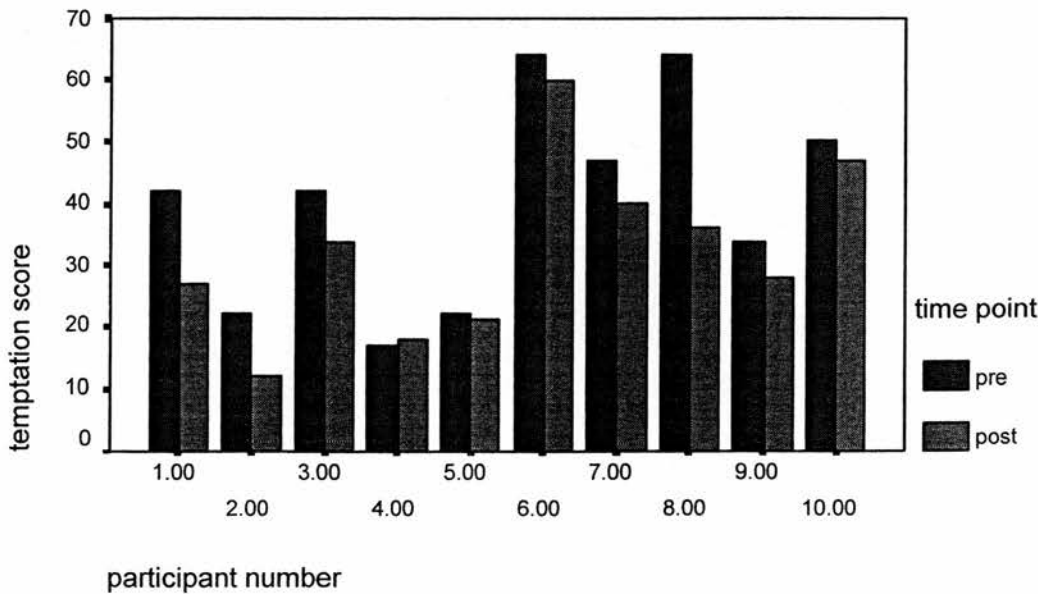
The graphs illustrate the scores pre and post intervention for each of the treatment participants, for each measure. On the self-efficacy scale, 6 (60%) of the treatment participants appear to score higher post intervention, whilst 4 (40%) either remain the same or score slightly lower. On the temptation scale, 9 (90%) of the participants score lower following the intervention, whilst 1 (10%) scores slightly higher.

Self efficacy score for treatment participants:
pre and post intervention



Graph 3.

Temptation score for treatment participants:
pre and post intervention



Graph 4.

The mean self-efficacy score pre intervention for the treatment participants was 38.8 (s.d.= 7.49) and post intervention was 44.1 (s.d.= 9.66). This difference was not statistically significant ($t= 1.38$, $p= 0.0995$) (Table. 6). However, the self-efficacy means are in the direction predicted. Their mean pre intervention temptation score was 40.4 (s.d.= 16.73) and post intervention score was lower at 32.3 (s.d.= 14.33). This difference was statistically significant ($t= 3.064$, $p= 0.006$). This means that although the participants' evaluation of their self-efficacy didn't change following the intervention, they were less tempted to drink alcohol.

The control participants' mean pre intervention score was 39.5 (s.d.= 11.41) and post score was 37.0 (s.d.= 13.72). These scores were not significantly different ($t= 0.745$, $p= 0.2375$). Similarly, their pre ($m= 29.7$, s.d.= 10.89) and post ($m= 28.4$, s.d.= 9.31) temptation scores were not significantly different ($t= 0.366$, $p= 0.362$).

Table 6. Within group comparison of means, for self efficacy and temptation pre and post intervention.

variable	treatment				Control			
	pre	Post			pre	Post		
	M (sd)	M (sd)	t (df)	Sig. (one tailed)	M (sd)	M (sd)	t (df)	Sig. (one tailed)
Self efficacy	38.8 (7.49)	44.1 (9.66)	1.38 (9)	0.0995	39.5 (11.41)	37.0 (13.72)	0.745 (9)	0.2375
Temp.	40.4 (16.73)	32.3 (14.33)	3.064 (9)	0.006	29.7 (10.89)	28.4 (9.31)	0.366 (9)	0.362

Effect size

The scores on the AASE were further examined to determine the magnitude of differences between the treatment and control group. Kazdin (1998) recommends that this be used as a helpful additional technique for illustrating the findings of a data set.

Determining the magnitude of differences was achieved by establishing the effect sizes following the intervention. The effect size was calculated using the following formula:

$$ES = \frac{2t}{\sqrt{d.f.}}$$

The 't' value and 'df' (degrees of freedom) refer to the between group t-test results reported in table 5 earlier. These effect sizes were converted into standard deviation units and equivalent percentiles (Coolican 1994, table 2, p.449-451)

Table 7. Between groups- mean differences, effect size and percentile rank following intervention

Measure	Mean difference scores (sd) pre- post intervention		Effect size	Percentile
	treatment	control		
Self efficacy	5.3 (12.01)	-2.5 (10.6)	0.72	76 th
Temptation	-8.1 (8.36)	-1.3 (11.24)	0.72	76 th

Given the mean difference scores for self-efficacy pre-post intervention for the treatment (5.3) and control participants (-2.5), there was an effect size of 0.72. That is, the mean of the treatment group is 7.2 /10 of a standard

deviation higher than the control group. Under a normal distribution, this would mean that the average participant treated is better off than 76 percent of participants who did not receive treatment.

For the corresponding mean difference temptation scores post (-8.1 for treatment participants and -1.3 for the controls), there was also an effect size of 0.72.

A restriction in using this approach is that there are not enough participants involved in this study to determine whether they represent a normally distributed population. Therefore, stating a percentile is slightly misleading and the findings from examining the effect size should be evaluated conservatively. However, using effect size adds an informative amount of supplemental analysis.

Summary of results for hypothesis one

The hypothesis predicted that there would be a significant increase in participants' sense of self-efficacy following participation in the treatment programme compared to the control participants. This hypothesis was not supported, as there was no statistically significant difference between the self-efficacy of those who received treatment compared to those who had not. A closer examination of the within subject data also revealed no significant difference following the intervention.

However, a more descriptive examination of the data revealed a reasonably large effect size of 0.7

The AASE scale also includes a temptation score reflecting the strength of drinking cues, to relate to self-efficacy. Although there was no significant difference between the treatment group and control group in levels

of temptation to drink, there was a significant difference when looking within participant groups, for the treatment group. The conclusion based on this change in score is that the treatment participants were less tempted to drink, following the intervention.

3.04 Hypothesis two: There will be a significant increase in participants' motivation to abstain from drinking alcohol following participation in the treatment programme compared to control participants

This hypothesis was evaluated using the SOCRATES scale (Stages Of Change Readiness and Treatment Eagerness Scale). The scale was designed to test the motivation for change in alcohol abusers and consists of three subscales: Recognition (RE), Ambivalence (AM) and Taking Steps (TS). There are 19 items in the scale, each one being rated 1-5 depending on level of agreement. The raw scores for each of the subscales can then be compared to a sample population and given a rating of very low to very high. Motivation for change is not a unitary score but a pattern of scores across the three subscales.

High motivation to change consists of a high recognition score, low ambivalence score and high taking steps score i.e. they acknowledge they have a drinking problem, know it is causing harm and are actively doing something to change

Low motivation to change consists of a low recognition score, high ambivalence score and low taking steps score i.e. they deny they have a

problem, are very ambivalent about their drinking causing any harm and are not doing anything active to change. Low motivation can also consist of a low ambivalence score in the presence of low recognition i.e. they do not wonder if they are in control of their drinking because they 'know' they do not have a drinking problem

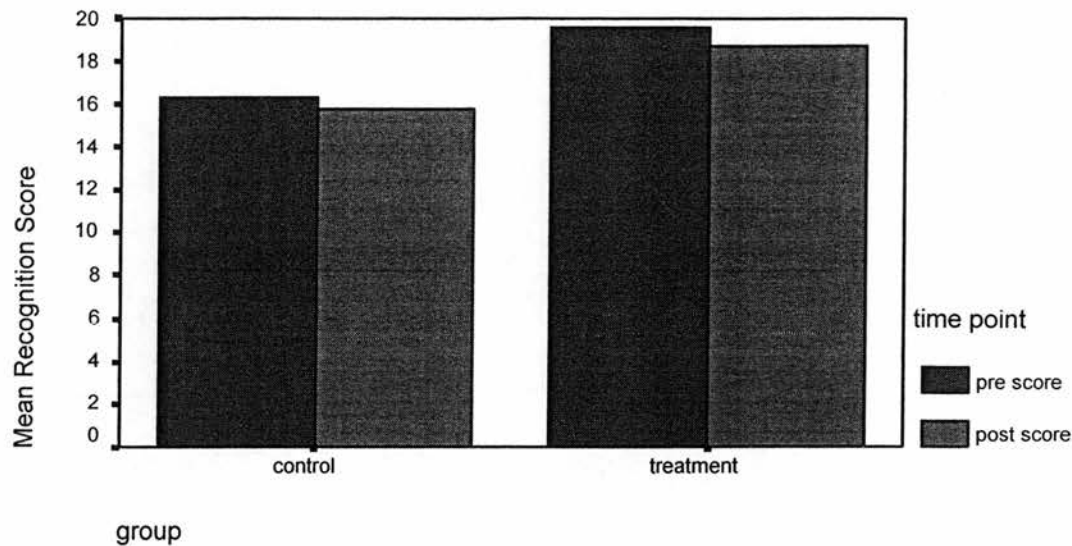
Differences between treatment and control groups

The graphs (5, 6 & 7) illustrate a higher mean Recognition score for the treatment group ($m= 19.6$, $s.d.= 7.56$) compared to the control pre intervention ($m= 16.3$, $s.d.= 6.76$) and similarly, a higher mean Recognition score post intervention for the treatment group ($m=18.7$, $s.d.= 7.37$) compared to the controls ($m= 15.8$, $s.d.= 5.82$).

The mean Ambivalence score for the treatment group ($m= 11.5$, $s.d.= 2.59$) is higher than the controls ($m= 9.7$, $s.d.= 3.36$) at pre intervention but is very similar post intervention (treatment mean= 10.2 , $s.d.= 1.68$ and control mean= 9.5 , $s.d.= 3.34$).

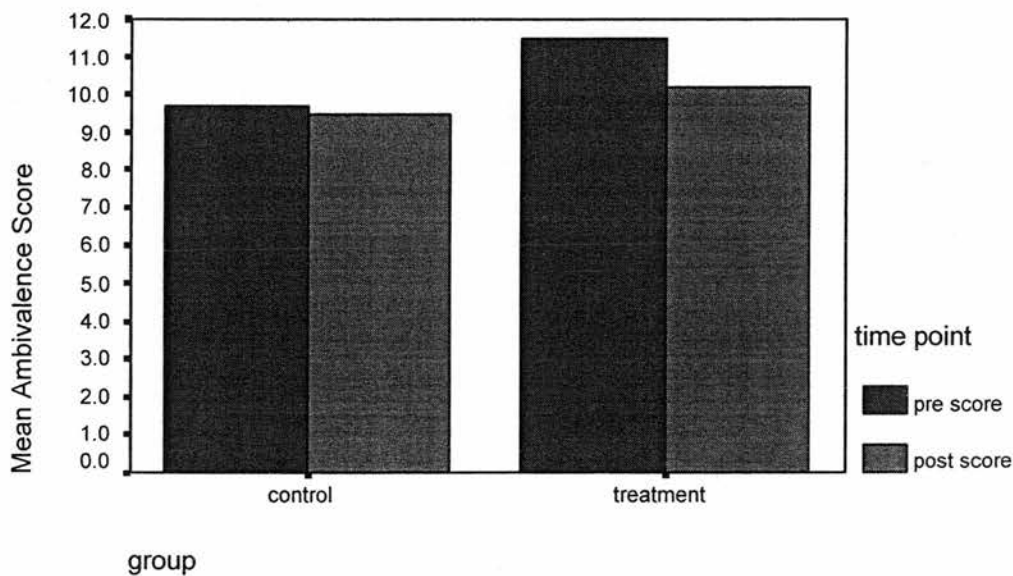
There appears to be very little difference in the pre intervention Taking Steps score between the treatment participants ($m= 25.3$, $s.d.= 7.46$) and control participants ($m=23.9$, $s.d.= 8.18$). However, at the post intervention time point, the treatment group has a higher mean Taking Steps score ($m= 26.5$, $s.d.= 5.52$) compared to the control ($m= 24.2$, $s.d.= 7.39$).

Mean Recognition Score:
pre and post intervention for both groups



Graph 5.

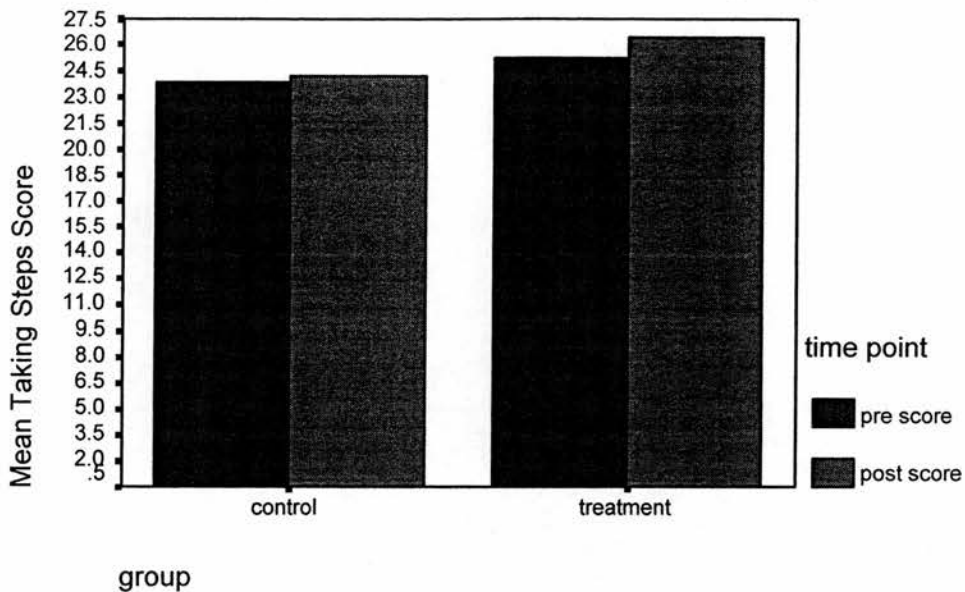
Mean Ambivalence Score:
pre and post intervention for both groups



Graph 6.

Mean Taking Steps Score:

pre and post intervention for both groups



Graph 7.

To evaluate whether a change has taken place on each of the subscales, after the intervention, a mean 'difference' score for each group, for each scale, was calculated and then compared. Each of the individual participants' pre intervention scores was subtracted from their post intervention scores to give their individual 'difference' score. For each group these were summed and the means taken. A comparison was then made between the groups' two mean 'difference' scores at the end of treatment.

The treatment participants' mean Recognition score post-intervention was 18.7 (s.d.= 19.6) and pre-intervention was 19.6 (s.d. = 7.56), giving a mean 'difference' score of -0.9 (s.d.= 6.4). For, the control participants a 'difference' score of -0.5 (s.d.= 2.79) was found when their post intervention score was 15.8 (s.d.= 5.82) and their pre intervention score was 16.3 (s.d.= 6.76). The overall difference between these means was -0.4 . There was no

significant difference between the two groups' mean 'difference' scores, on Recognition, post intervention ($t = 0.180$, $p = 0.429$) (Table 8).

Table 8. Means, standard deviations and between group comparison of means for recognition, ambivalence and taking steps scores, pre and post intervention.

variable		treatment		Control		t-test				
		Mean (s.d.)	Mean Diff. (s.d.)	Mean (s.d.)	Mean Diff. (s.d.)	Mean diff	t (df)	P (one tailed)	CI 95%	Sig?
recog	Pre	19.6 (7.56)		16.3 (6.76)						
	Post	18.7 (7.37)	-0.9 (6.4)	15.8 (5.82)	-0.5 (2.79)	-0.4	0.18 (18)	0.429	-5.06 4.26	NS
ambiv	Pre	11.5 (2.59)		9.7 (3.36)						
	post	10.2 (1.68)	-1.3 (2.66)	9.5 (3.34)	-0.2 (1.61)	-1.1	1.11 (18)	0.14	-3.17 0.97	NS
Taking steps	Pre	25.3 (7.46)		23.9 (8.18)						
	Post	26.5 (5.52)	1.0 (5.22)	24.2 (7.39)	0.3 (1.76)	0.7	0.401 (18)	0.346	-2.96 4.37	NS

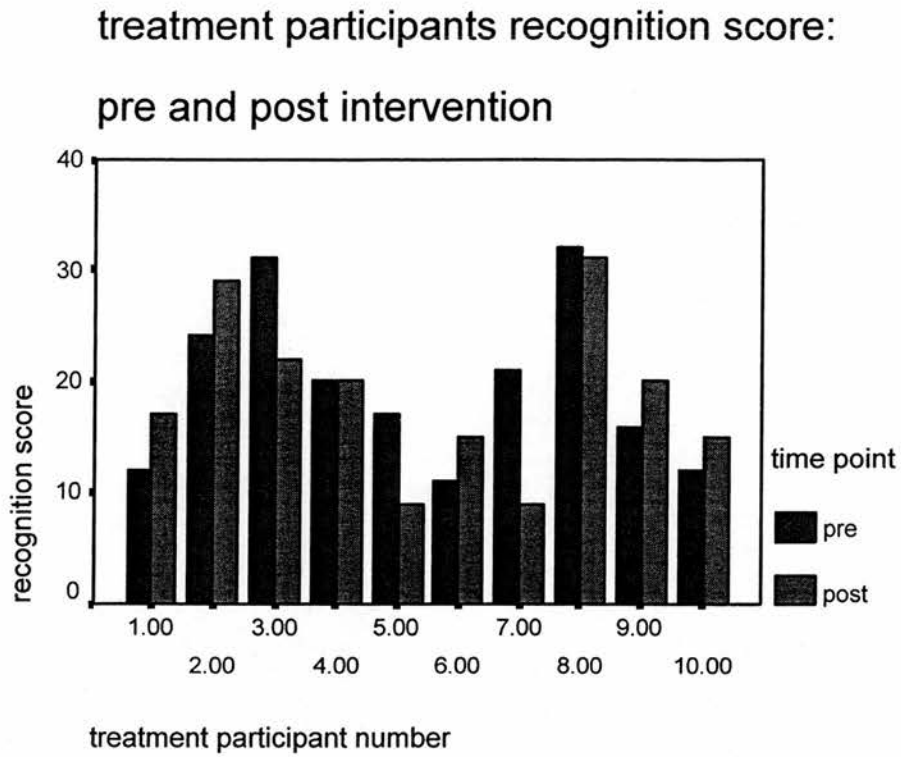
The mean Ambivalence score, post intervention, for the treatment participants ($m = 10.2$, $s.d. = 1.68$) was slightly lower than their pre intervention mean ($m = 11.5$, $s.d. = 2.59$). This produced a mean 'difference' score of -1.3 ($s.d. = 2.66$). The control participants' mean score post intervention ($m = 9.5$, $s.d. = 3.34$) was very similar their pre intervention score ($m = 9.7$, $s.d. = 3.36$), giving a mean 'difference' score of -0.2 ($s.d. = 1.61$). The difference between

the means of the two groups, was not statistically significant ($t= 1.11$, $p= 0.14$).

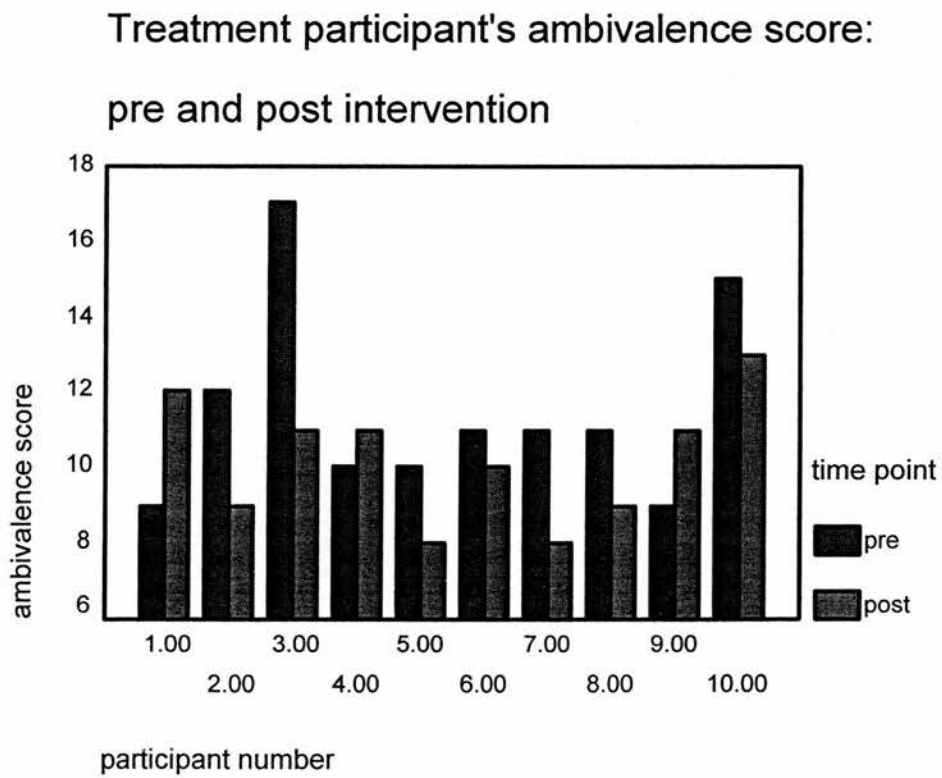
The mean Taking Steps 'difference' score for the treatment participants was 1.0 (s.d.= 7.46) and that of the controls was lower at 0.3 (s.d.= 1.76). This difference in scores, after the intervention was not statistically significant ($t= 0.401$, $p= 0.346$).

Within group analysis

The graphs illustrate the scores pre and post intervention for each of the individual treatment participants, for each subscale on the SOCRATES. On the Recognition subscale, 5 (50%) of the treatment participants appear to score higher post intervention, whilst 1 (10%) remained the same and 4 (40%) score slightly lower. On the Ambivalence subscale, 7 (70%) of the participant's score lower following the intervention, whilst 3 (30%) score slightly higher. Participant number three, in particular, scores a lot lower following the relapse programme. Comparing the pre and post intervention scores on the Taking steps subscale, 7 (70%) of the treatment participants score higher, whilst 3 (30%) score lower.

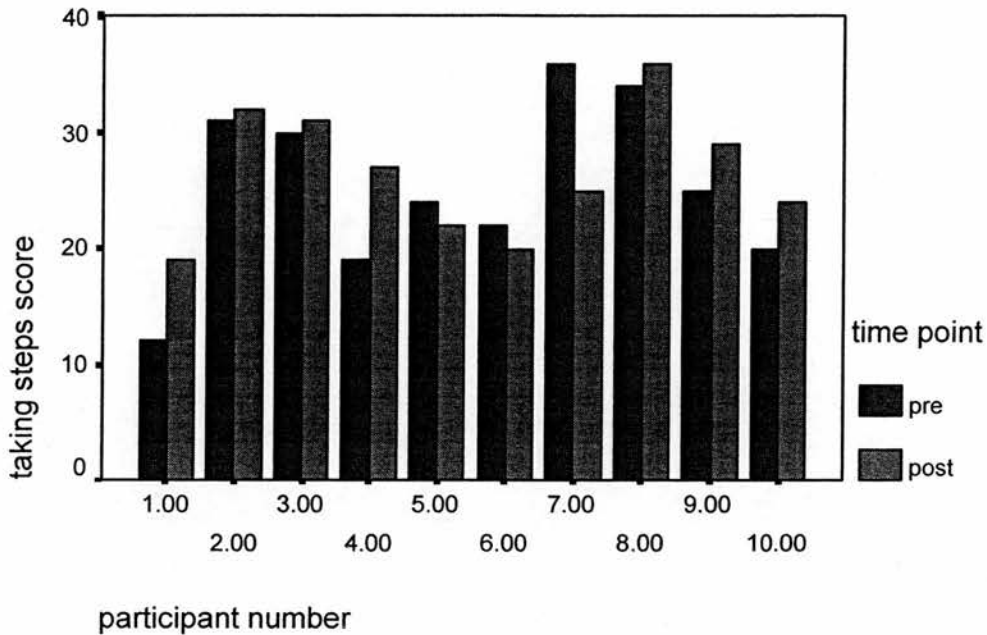


Graph 8.



Graph 9.

Treatment participant's taking steps score:
pre and post intervention



Graph 10.

The mean Recognition score pre intervention for the treatment participants was 19.6 (s.d.= 7.56) and post intervention was 18.7 (s.d.= 7.37). This difference was not statistically significant ($t= 0.442$, $p= 0.33$) (Table. 9). The treatment participant's mean pre intervention Ambivalence score was 11.5 (s.d.= 2.59) and post intervention score was slightly lower at 10.2 (s.d.= 0.533). On this subscale a drop in score is indicative of treatment success. However, the difference in means was not statistically significant ($t= 1.54$, $p= 0.079$). The mean Taking Steps, pre and post scores, were also in the direction predicted but were not significantly different ($t= 0.699$, $p= 0.251$).

Table 9. Within group comparison of means, for self efficacy and temptation pre and post intervention.

variable	Treatment				Control			
	pre	Post			Pre	Post		
	M (sd)	M (sd)	t (df)	Sig. (one tailed)	M (sd)	M (sd)	t (df)	Sig. (one tailed)
Recog	19.6 (7.56)	18.7 (7.37)	0.442 (9)	0.33	16.3 (6.76)	15.8 (5.82)	0.565 (9)	0.293
ambiv	11.5 (2.59)	10.2 (0.533)	1.54 (9)	0.079	9.7 (3.36)	9.5 (3.34)	0.391 (9)	0.35
Taking steps	25.3 (7.46)	26.5 (5.52)	0.699 (9)	0.251	23.9 (8.18)	24.2 (7.39)	0.537 (9)	0.3

None of the control participant's scores, on any of the SOCRATES subscales, were significantly different at the post time point compared to the pre time point.

Effect size

Again, the magnitude of the differences between the treatment and control group was established by determining the effect sizes following the intervention and then converting them to standard deviation units and percentiles (Coolican 1994, table 2, p.449-451).

Table 10. Between groups- mean differences, effect size and percentile rank following intervention

Subscale	Mean difference scores (sd) pre-post intervention		Effect size	Percentile
	treatment	control		
Recognition	-0.9 (6.4)	-0.5 (2.7)	0.08	54 th
Ambivalence	-1.3 (2.67)	-0.2 (1.62)	0.525	70 th
Taking Steps	1.0 (5.2)	0.3 (1.77)	0.19	57 th

Given the mean 'difference' scores for Recognition pre to post intervention for the treatment (-0.9) and control participants (-0.5), there was a very low effect size of 0.08. That is, the mean of the treatment group is only 0.8 /10 of a standard deviation higher than the control group.

There was an average effect size of 0.525 for ambivalence scores, with a post minus pre intervention 'difference' score for treatment participants of 1.3 relative to -0.2 for the controls.

Finally, there was a low effect size of 0.19 for the Taking Steps subscale following the intervention.

Summary of results for hypothesis two

Hypothesis two predicted that there would be a significant increase in participants' motivation to abstain from drinking alcohol following participation in the treatment programme compared to control participants. This hypothesis was not supported. The means for all the measure's subscales were in the direction predicted but they did not reach significance.

An examination of within treatment participant differences illustrated a similar finding i.e. all means in the direction predicted but not significant.

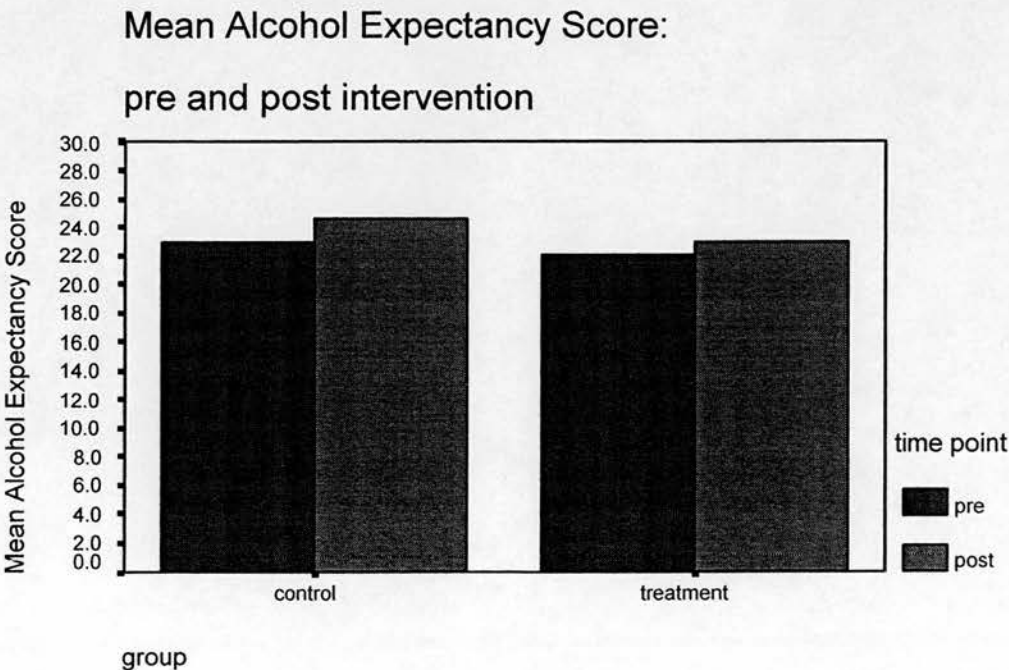
A descriptive look at the data reveals a low to medium effect size for the treatment programme on measures of motivation to change.

3.05 Hypothesis three: There will be a significant increase in participants' knowledge and expectations of the effects of alcohol following participation in the treatment programme compared to control participants

This hypothesis was tested using the Alcohol Effects Questionnaire (AEFQ) This questionnaire is forty items long and assesses both the positive and negative effects people expect alcohol to have on themselves.

Differences between treatment and control groups

The graphs show that the mean treatment and control scores are very similar pre and post intervention between the two groups. In both cases there appears to be a slight increase in score post intervention.



Graph 11

A mean 'difference' score for each group was calculated and then compared, to evaluate whether a change had taken place in AEFQ scores after the intervention. Each of the individual participants' pre intervention scores was subtracted from their post intervention scores to give their individual 'difference' score. For each group these were summed and the means taken. A comparison was then made between the two groups' mean 'difference' scores at the end of treatment.

The treatment participants' mean AEFQ score post intervention was 22.9 (s.d.= 9.29) and their pre intervention mean score was 22.0 (s.d.= 10.02). This produces a mean 'difference' score of 0.9 (s.d.= 4.6). The control participants' mean 'difference' score is slightly higher (m= 1.7, s.d.= 5.43), since their mean scores increase post intervention to 24.6 (s.d.= 9.34) from a pre intervention mean score of 22.9 (s.d.= 11.51). However, there was no significant difference between the two groups' mean 'difference' scores after intervention ($t= 0.354$, $p= 0.363$) (Table 11).

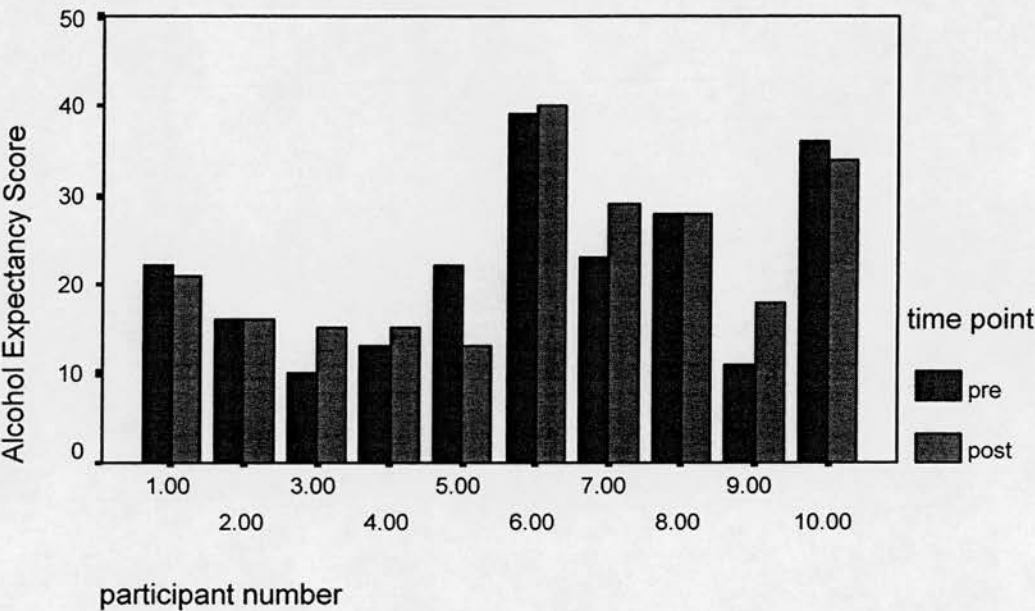
Table 11. Means, standard deviations and between group comparison of means for alcohol expectancy scores, pre and post intervention

variable		Treatment		control		t-test				
		Mean (s.d.)	Mean Diff. (s.d.)	Mean (s.d.)	Mean Diff. (s.d.)	Mean diff	t (df)	P (one tailed)	CI 95%	Sig?
AEFQ	Pre	22.0 (10.02)		22.9 (11.51)						
	Post	22.9 (9.29)	0.9 (4.6)	24.6 (9.34)	1.7 (5.43)	-0.8	0.354 (18)	0.363	-5.5 3.9	NS

Within group analysis

Looking in more detail at the participants from the treatment group: 5 (50%) of these participants scores increased after the intervention, 2 (20%) stayed the same and 3 (30%) scored lower at post intervention.

Alcohol Expectancy Score for treatment participants:
pre and post intervention



Graph 12.

The mean AEFQ score pre intervention for the treatment participants was 22.0 (s.d.= 10.02) and post intervention was 22.9 (s.d.= 9.29). This difference was not statistically significant ($t= 0.615$, $p= 0.277$) (Table. 12). The control participants' mean scores (22.9 & 24.6) were also not significantly different pre and post intervention ($t= 0.989$, $p= 0.1745$)

Table 12 . Within group comparison of means, for self efficacy and temptation pre and post intervention.

variable	treatment				Control			
	pre	Post			pre	Post		
	M (sd)	M (sd)	T (df)	Sig. (one tailed)	M (sd)	M (sd)	t (df)	Sig. (one tailed)
AEFQ	22.0 (10.0)	22.9 (9.29)	0.615 (9)	0.277	22.9 (11.51)	24.6 (9.34)	0.989	0.1745

Effect size

The magnitude of the differences between the treatment and control group was established.

Table 13. Between groups- mean difference, effect size and percentile rank following intervention

Measure	Mean difference scores (sd) pre-post intervention		Effect size	Percentile
	treatment	control		
Alcohol effects questionnaire	0.9 (4.62)	1.7 (5.43)	- 0.17	57 th

Given the mean difference score for the AEFQ pre-post intervention, for the treatment (0.9) and control participants (1.7), there was a very low effect size of -0.17. The mean of the treatment group is actually 1.7 /10 of a standard deviation lower than the control group.

Summary of the results for hypothesis three

Hypothesis three predicted that there would be a significant increase in participants' knowledge and expectations of the effects of alcohol following participation in the treatment programme compared to control participants. This hypothesis was not supported. There was no significant difference between those who had participated in the treatment programme to those who had not. There was in fact a slight decrease in the knowledge of the effects of alcohol, in the participants' group indicating a very low effect size for the intervention on this measure.

3.06 Hypothesis four: There will be a significant increase in participants' intention to change their drinking behaviour

As it was not possible to use a longitudinal design to measure potential changes in drinking behaviour, participants' 'intention' to change behaviour was used instead. The factors most relevant to intention are those of self-efficacy, motivation and knowledge of subjective norms. These components, suggested by Ajzen and Madden (1986) in their Theory of Planned Behaviour model, are theoretically and conceptually inter-related. The questionnaires for the current study were thought to represent and tap into each of the relevant components. Each of the measures has already been examined individually, to see if there was a significant change pre and post intervention. However, as multiple, conceptually inter-related outcome measures, were used for this study, multivariate analyses were used to determine whether there were significant differences pre and post intervention on all the measures acting as a whole set i.e. all the dependent variables, representing the concept of 'intention' taken together.

A MANOVA was used to estimate the significance of any differences pre and post intervention but no significant result was found, $F= 1.58$, $p= 0.114$, d.f. = 6.

3.07 Exploratory analysis

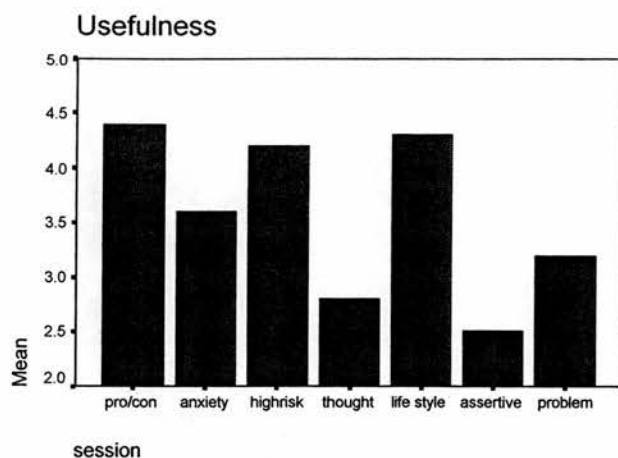
An additional aspect of the study involved looking at participant's experiences of the relapse programme and their evaluations of it. This was done through the session feedback questionnaires. Each session was rated by participants in terms of being useful, how logical it was, how confident they are that it would be successful and how confident they would be in recommending the approach to a friend. Participants were also invited to give any comments about the session.

Session rating data

Each of the ratings was examined in turn. Graphs and tables are used to illustrate the mean scores for each session

1) Which session was the most useful?


Participant's mean rating for each session:



Graph 13.

Participants rated the Pros and Cons session as the most useful, closely followed by the Life Style Imbalance session and the High Risk Situation session.

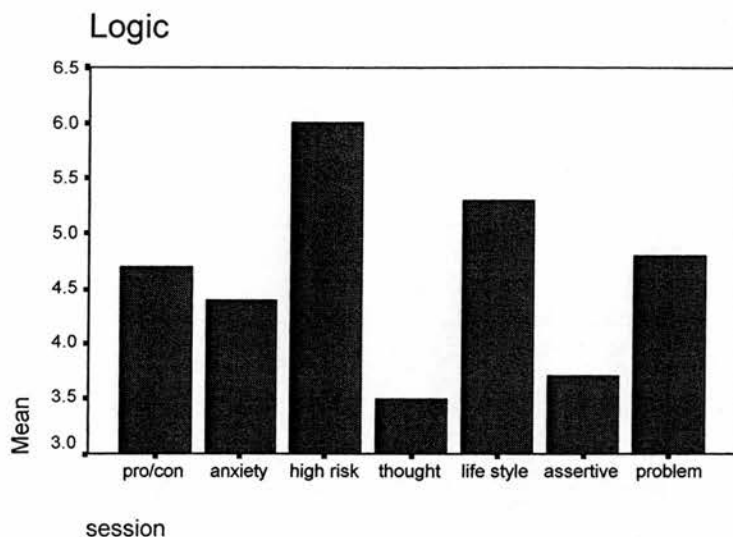
Table 14. Ranked mean scores for evaluated Usefulness, for each session.

Treatment session (& session no.)	Mean (s.d.)	Range (min-max)	MOST USEFUL
Pros and cons (1)	4.4 (2.11)	1-7	
Life Style Imbalance (5)	4.3 (2.21)	1-7	
High Risk Situations (3)	4.2 (2.34)	1-7	
Anxiety management (2)	3.6 (1.77)	2-7	
Problem Solving (7)	3.2 (1.61)	1-6	
Thought Processes (4)	2.8 (1.93)	1-6	
Assertiveness (6)	2.5 (2.22)	1-6	

The Thought Processes session and Assertiveness session scored at the bottom in terms of participants' rating of usefulness.

2) Which session seemed the most logical?

Participant's mean rating for each session:



Graph 14.

The High Risk Situation session was rated as the most logical and was followed by the Life Style Imbalance session.

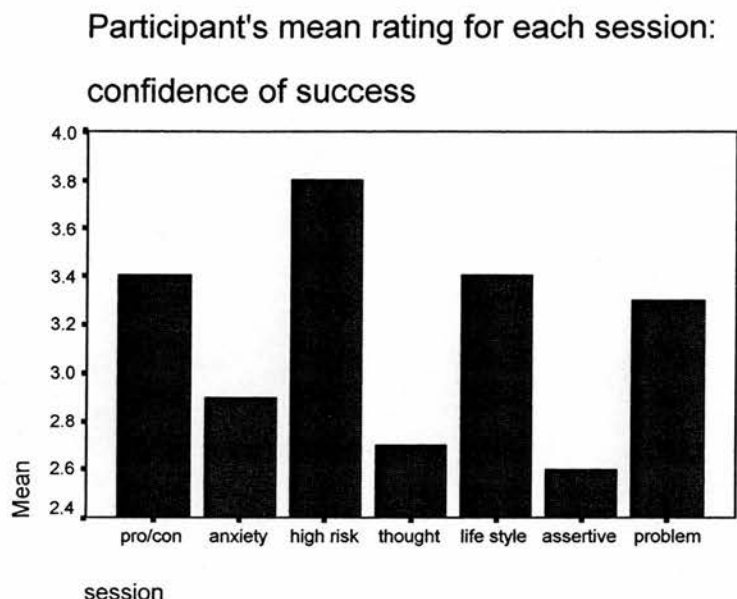
Table 15. Ranked mean scores, for evaluated logic, for each session

Treatment session (& session no.)	Means (s.d.)	Range (min-max)	MOST LOGICAL ↓ LEAST LOGICAL
High Risk Situations (3)	6 (1.3)	4-7	
Life Style Imbalance (5)	5.3 (1.15)	4-7	
Problem Solving (7)	4.8 (1.54)	2-7	
Pros and Cons (1)	4.7 (2.05)	1-7	
Anxiety Management (2)	4.4 (2.36)	1-7	
Assertiveness (6)	3.7 (2.21)	1-7	
Thought Processes (4)	3.5 (1.84)	1-6	

The Thought Processes session was rated the least logical, perhaps reflecting its' complexity and the large amount of abstract information it

contained. Interestingly, participants found it difficult to understand why a session on assertiveness had been included. This is at odds with the research indicating the role of social pressure in alcohol relapse (Chaney et al 1978).

3) Which session are you confident will be most successful?



Graph 15.

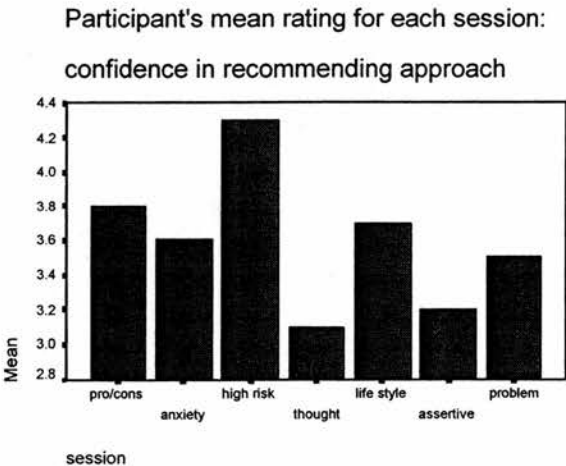
The session aimed at helping participants recognise and cope with high risk situations was the one the felt would be most successful. The Pros and Cons of drinking session, Lifestyle Imbalance session and Problem Solving session were also rated quite highly.

Table 16. Ranked mean scores for evaluating the confidence of success for each session

Treatment session (& session no.)	Mean (s.d.)	Range (min-max)	<div> MOST CONFIDENCE IN SESSIONS SUCCESS <div> ↓ </div> LEAST CONFIDENCE IN SESSIONS SUCCESS </div>
High Risk Situations (3)	3.8 (2.29)	1-7	
Pros and Cons (10)	3.4 (1.88)	1-6	
Life Style Imbalance (5)	3.4 (1.71)	1-6	
Problem Solving (7)	3.3 (1.63)	1-6	
Anxiety Management (2)	2.9 (1.72)	1-6	
Thought Processes (4)	2.7 (1.56)	1-5	
Assertiveness (6)	2.6 (2.06)	1-6	

Again, participants rated Assertiveness and Thought Processes the lowest, indicating that they did not have much confidence that the approach would be of any success in helping the


4) Which session would you be most confident recommending to a friend with similar problems?



Graph 16.

The High Risk Situation session was rated the one session the participants would recommend to a friend, above all the others. The Thought Processes session was the least likely to be recommended.

Table 17. Ranked mean scores for evaluations of confidence recommending each individual session

Treatment session (& session no.)	Mean (s.d.)	Range (min-max)	MOST CONFIDENT IN RECOMMENDING  LEAST CONFIDENT IN RECOMMENDING
High Risk Situations (3)	4.3 (2.05)	1-7	
Pros and Cons (1)	3.8 (1.68)	1-6	
Life Style Imbalance (5)	3.7 (1.88)	1-6	
Anxiety Management (2)	3.6 (1.71)	1-6	
Problem Solving (7)	3.5 (1.71)	1-6	
Assertiveness (6)	3.2 (2.20)	1-7	
Thought Processes (4)	3.1 (1.37)	1-5	

It's clear that the High Risk Situation, Pros and Cons and Life Style Imbalance sessions were the best received and the assertiveness and Thought Processes sessions the least.

3.08 Post hoc correlations: overview

Exploratory correlations were carried out to determine if there was any relation between the treatment participants' demographic information (eg. severity of TBI) and final outcome data on the three measures. The pre intervention scores were also included in these correlations, to investigate whether they may act as predictors for outcomes on any of the measures. Correlations were also carried out on participants' session evaluation scores and outcome measure scores following the end of treatment. As the correlations at this stage were exploratory and there was the need to avoid making too many type 2 errors, family wise alpha levels were not adjusted. The scatter plot graphs for each correlation are included in Appendix (7).

3.09 Post hoc correlations: outcome measures & session evaluation questionnaires

The AASE questionnaire is an evaluation of an individuals' efficacy to abstain from drinking in certain situations and the level of corresponding temptation. When examining the AASE data, it appears that higher participant ratings of self-efficacy following the intervention, are positively related to ratings of recommendation for the Pros and Cons session ($r = 0.645$, $p = 0.044$) and increasingly positive evaluations of the logic of the Problem Solving session ($r = 0.639$, $p = 0.047$)(table 18). This last finding, in particular, is consistent with the idea of alcohol relapse prevention training being a skill based, empowering intervention.

Post intervention ratings of temptation are positively related to the knowledge of alcohol effects at baseline ($r = 0.761$, $p = 0.011$). Additionally, the more tempted participants were by alcohol post intervention, the less logical they felt the assertiveness session had been ($r = -0.664$, $p = 0.036$).

Table 18: Correlations for AASE questionnaire data post intervention

AASE measure: post intervention	Questionnaire Variable	Pearson's r	Significance (2-tailed)
Self efficacy	Recommend: Pros/Cons session	0.645	0.044
	Logic: Problem solving session	0.639	0.047
Temptation	AEFQ pre intervention	0.761	0.011
	Logic: Assertiveness session	-0.664	0.036

The SOCRATES scale is a measure of motivation to change drinking behaviour and is composed of three factors: recognition, ambivalence and taking steps. Looking first at the Recognition scale: The more a participant recognised that they had a drinking problem, after the treatment programme, the more they felt they were taking steps to change the situation ($r = 0.808$, $p = 0.005$). Related to this, the higher their recognition after finishing, the more useful they felt the High Risk Situation session had been ($r = 0.821$, $p = 0.004$) and the more confident they were of it being successful in helping them prevent relapse ($r = 0.826$, $p = 0.003$). Similarly there was a positive relationship between recognition and recommendations for the Life Style Imbalance session ($r = 0.735$, $p = 0.015$) and the usefulness of the assertiveness session ($r = 0.647$, $p = 0.029$).

There was a negative correlation between ratings of ambivalence post intervention and ratings of Taking Steps pre intervention ($r = -0.684$, $p = 0.029$). This means that the more action you feel you are taking at the start of the programme to change your drinking, the less ambivalent you feel about making a change at the end of the treatment programme. This emphasises the importance of involving participants in the treatment programme when they are in the contemplation or action stage of change (Prochaska & DiClemente 1982). It also suggests that there may be an opportunity to monopolise on this low ambivalence by building momentum for further change.

The more steps the participants felt they were taking towards making a change, the more useful ($r = 0.691$, $p = 0.027$) and logical ($r = 0.562$, $p = 0.091$) they had found the High Risk Situation session (table 19). This is consistent

with the previous section on session evaluation (graphs 13 & 14 and tables 14 & 15), in which participants rated the High Risk Situation session very favourably (although they rated the Pros and Cons session as more useful). There was a positive correlation between the participants' feelings that the Pros and Cons session would be successful and their belief that they were taking steps to change ($r = 0.632$, $p = 0.05$). Finally, the more steps the participants felt they were making towards change, the more they would recommend the anxiety management session to a friend with similar difficulties ($r = 0.709$, $p = 0.022$).

Table 19: Correlations for SOCRATES questionnaire data post intervention

SOCRATES measure: post intervention	Questionnaire Variable	Pearson's r	Significance (2 tailed)
Recognition	Taking Steps (Post)	0.808	0.005
	Usefulness: High Risk Situations session	0.821	0.004
	Confident of success: High Risk Situations session	0.826	0.003
	Recommend: Life style Imbalance session	0.735	0.015
	Usefulness: Assertiveness session	0.647	0.043
Ambivalence	Taking Steps (Pre)	-0.684	0.029
Taking Steps	Recognition (Post)	0.808	0.005
	Confident of success: Pros/Cons session	0.632	0.05
	Recommend: Anxiety session	0.709	0.022
	Logical: High Risk Situations session	0.562	0.091
	Useful: High Risk Situations session	0.691	0.027

There is only one correlation with the Alcohol Effects Questionnaire and that is with ratings of temptation pre intervention. The more a participant knew about the expected effects of alcohol before they began the treatment programme the more tempted they were to have a drink ($r= 0.844$, $p= 0.002$).

Table 20: Correlations for AEFQ questionnaire data post intervention

AEFQ measure: post intervention	Questionnaire Variable	Pearson's r	Significance
AEFQ	Temptation pre intervention	0.844	0.002

3.10 Post hoc correlations: demographic information

Correlations between demographic variables and pre/ post outcome measures were made in order to investigate the possibility of establishing a profile of predictor variables that may predict those that benefit most from treatment or highlight early on, the adjustments that may have to be made in the programme, such as emphasising particular treatment sessions over others (table 21).

Age correlated negatively with both measures of temptation ($r= -0.687$, $p= 0.028$) and knowledge of alcohol effects ($r= -0.651$, $p= 0.042$) before the intervention began. The older the participants were the less tempted they were by alcohol and the less they knew about expected the effects of alcohol. The former finding illustrates the need to target younger drinkers who are more tempted to drink. This is also the population who is more likely to have a head injury in the first place. The latter finding is slightly unusual, as common

sense would suggest that the older you are and the more experience you have of alcohol, the more you would know about its effects. However, it could reflect the fact that as you get older your experience of the effects of alcohol becomes more personalised. As the AEFQ reflects generic social norms about alcohol, an older, more experienced drinker may score lower on the measure, as they conform less to this generic expectation of alcohol. This negative correlation also occurs with the AEFQ post intervention ($r = -0.666$, $p = 0.035$).

The severity of the participants' brain injury was estimated using their Glasgow Coma Scale score. It appears that the more severe the head injury, the more useful ($r = 0.777$, $p = 0.023$) and successful ($r = 0.739$, $p = 0.036$) the participants felt the life style imbalance session was. This perhaps reflects the global changes in everyday life and resulting stress that a brain injury has on an individual and the corresponding feelings of loss, both of skills and confidence. There was also a positive correlation with the assertiveness session ($r = 0.872$, $p = 0.005$). The positive feelings towards this session may be due to a need to compensate for underlying feelings of self-denigration, established by the participant's experiences of loss.

Table 21: Correlations for demographic data

Demographic Variable	Outcome Variable	Pearson's r	Significance (2 tailed)
Age	Temptation Pre	-0.687	0.028
	AEFQ Pre	-0.651	0.042
	AEFQ Post	-0.666	0.035
TBI severity	Useful: life style imbalance	0.777	0.023
	Confident of success: life style imbalance	0.739	0.036
	Confidence of success: assertive session	0.872	0.005
Time since injury	Self efficacy Pre	-0.769	0.026
	Logic: Anxiety	0.709	0.049
MMSE score	Useful: pros/cons	-0.940	0.005
	Recommend: pros/cons	-0.961	0.002
	Recommend: assertive	-0.96	0.002
	Recommend: problem solving session	-0.968	0.001

The longer the time elapsed since the participants acquired their injury, the more negative the correlation with feelings of pre intervention self-efficacy ($r = 0.769$, $p = 0.026$). Perhaps this means that the more time an individual has after they acquire their injury, the more opportunity they have to realise the impact of this on their life and consequently the lower they rate their ability to deal with situations. There is no correlation, positive or negative, between time since injury and self-efficacy at the end of treatment, even though the self-efficacy means are in the right direction indicating some acquisition of skills (graph 3 & table 6). There is a positive correlation with the ratings of the logic behind the anxiety session ($r = 0.709$, $p = 0.049$), which again may reflect insight into the new demands and difficulties coping with everyday life, that their head injury has caused.

The Mini Mental State Examination (MMSE) score was used as a basic measure of cognitive functioning. This was because it was the only consistent assessment of cognitive functioning, recorded in the medical notes, available for all the participants. The MMSE score correlated negatively with a number of session evaluations. The higher the participants' MMSE score (and therefore higher cognitive functioning) the less useful they found the Pros and Cons of drinking session ($r = -0.940$, $p = 0.005$) and the less likely they were to recommend it ($r = -0.961$, $p = 0.002$). This session may have been too simplistic for participants who were higher functioning and capable of more abstract self-reflection. Additionally, the higher the MMSE score the less likely the participants were to recommend the assertiveness session ($r = -0.96$, $p = 0.002$) and problem solving session ($r = -0.968$, $p = 0.001$).

All the correlations with the MMSE suggest that future treatment programmes may need to be adapted to take into consideration the participants' level of cognitive ability. Perhaps a more challenging version of the sessions would be more appropriate and more engaging for the more capable participants.

4.0 Discussion

4.01 Overview of the results

This study set out to evaluate whether an adapted alcohol relapse prevention programme would be an effective treatment approach for patients with traumatic brain injuries and alcohol abuse problems. A further purpose of the pilot study was to evaluate which aspects of the programme were valued by participants, in order to gain information to refine the programme for future clinical work.

The efficacy of the programme was evaluated using three measures, which correspond to the factors contributing to the concept of 'intention to change'- self-efficacy, motivation to change and knowledge of the normal effects of alcohol.

The first experimental hypothesis, which stated that participants' ratings of self-efficacy would increase following treatment compared to a control group, was not supported. There was no statistically significant difference between the groups post intervention, although the change in mean self-efficacy score, for the treatment participants, was in the direction predicted. This was reflected in a reasonably large effect size for the intervention. Looking within the treatment group itself, a comparison of pre to post treatment scores showed no significant change. The questionnaire used to evaluate hypothesis one, also included a 'temptation' sub-scale, which provided an indication of the strength of the drinking cues. Although not an experimental hypothesis, it was discovered that following the intervention, treatment participants were less tempted to consume alcohol than they were before the treatment. The results for hypothesis one, perhaps reflect that a

small attitudinal change has been made, in which participants feel less inclined to drink alcohol but still do not rate their ability to abstain from drinking very highly. This may be attributable to the participant's lack of opportunity to apply any newly acquired skills and so gain evidence of increased self-efficacy. Perhaps once participants are discharged into a community setting this would change.

The second hypothesis stated that the treatment participants would be more motivated to abstain from drinking compared to control participants, after completing the intervention. Again this hypothesis was not supported. There was no difference in the motivation to change scores between the treatment and control participants, post intervention and there was no change within the treatment group over the course of therapy. The mean scores were all in the direction predicted but did not reach statistical significance. The effect size for the treatment programme on participant's motivation score was quite low. This may be due to a bias in the selection of participants. Those who agreed to be included in the research study were already in the contemplative or action stages of change. They were all sufficiently motivated to change their drinking behaviour that they were willing to be involved in seven weeks of therapy. The participant's baseline level of motivation may then have been quite high and unlikely to make a significant change over the seven weeks of treatment. The control participants would have been in a similar position, with the expectation of therapeutic help in the future, keeping their motivation steady over the seven weeks. Bombardier et al (1997) found a similar pattern when they surveyed the readiness to change in a group of 50 traumatically brain injured patients. Eighty percent of their sample were in the

contemplation or action stage of change and showed a significantly higher readiness to change their drinking than a general medical sample of heavy alcohol users. Katz (2005) believes this spontaneous change in drinking behaviour occurs because of a period of contemplation about alcohol use post injury. He suggests that this creates a window of opportunity, which could be used to help patients move towards abstinence. An additional possible reason that the motivation scores did not increase significantly after the intervention, was that the intervention only contained one session that was directly aimed at altering motivation (ie. session one- the Pros and Cons of drinking). This is in contrast to the multiple motivation sessions that comprise other research (eg. Bombardier and Rimmele 1999; Cox et al 2003)

The third hypothesis, that there would be a significant increase in treatment participant's knowledge and expectations about the effects of alcohol following the intervention, was not supported. Within the treatment group only fifty percent of the participants' scores increased over the course of the intervention, whilst a third of the participants' scores actually decreased (although these differences were not statistically significant). There was a very low effect size for the treatment, when evaluating it using this factor.

The final hypothesis was also not supported. It stated that there would be an increase in participant's intention to change their drinking behaviour following the relapse programme.

This lack of result may be attributable to the method chosen for evaluating change. Due to the additional problems that this patient group presents with, particularly the disinhibition and physically aggressive behaviour, many of the patients have difficulty getting suitable placements for

discharge (although there is also a lack of such placements). The result is that a selection of the patients, included in this study, are likely to be in hospital for a considerable length of time. This meant that a longitudinal design could not be used for the study and it was not feasible to use the amount of alcohol drunk, pre injury and after discharge, as the measure of efficacy for the relapse programme. The maintenance and carry over of skills and the long-term impact on functioning would have to be entirely speculative. Therefore, the concept of behavioural intention, as defined by Ajzen and Madden (1986), was used as the conceptual framework for measuring change. This in itself may have been a major shortcoming of the research, as the concept of 'intention' to change behaviour does not necessarily have a direct causal link to actual change in behaviour. There are other moderating factors such as prior experience and past history of attempts at abstinence, perceived susceptibility and perception of the seriousness of the alcohol problem (Becker 1974). Also, only the most accessible and salient beliefs are predictive of change, so the concept of intention may have been too intangible to measure accurately. Therefore, the index of change used for the study may not have been as valid as initially thought. Even the published studies, which use frequency of alcohol consumption, pre and post intervention, as an indication of change are perhaps not focusing on the most relevant factor. It is not just the absence of drinking that is the criterion necessary for judging whether an important change has been achieved but the 'degree' of change and the impact that change has on a person's life. Such a measure would have to evaluate quality of life but more importantly reflect the quality of life issues salient to that person.

It was always going to be difficult evaluating the effectiveness of the programme, if patients were not discharged. It would also be important to have a fairly accurate and predictive assessment tool, as alcohol relapse is quite a low base rate behaviour but highly consequential when it does occur. Another method of measuring the impact of the programme, apart from frequency of alcohol drunk after discharge, has been suggested by Black et al (1997). Although their work was with participants with a learning disability, in long term residential care, they found that using structured role-plays was a good assessment tool and an indication of the effectiveness of their training programme. Whilst this may be a little simplistic, on its own, for an adult population with head injury, it may provide additional useful information for refining and adjusting the programme.

4.02 Methodological criticisms

There are a number of other limitations and methodological criticisms of this research study. Each is examined in the sections that follow.

1) Time constraints

The pilot study was a fixed term project with a nine month time restriction. Within that time, the relapse programme had to be adapted for a head injured population, materials (such as handouts) had to be produced, participants had to be recruited, assessments performed and seven sessions of therapy delivered to ten of the participants. There was not the opportunity to carry out a six, nine or twelve month follow up which would have been incorporated as part of a larger scale study. As already discussed, though, many of the participants would still be in hospital at these time points and the more interesting information may have concerned the application of their relapse

skills, when back in the community. Corrigan et al (1995) found that, at six months after discharge from hospital, participants in their study who had received therapy, decreased the frequency of their alcohol use by 77 percent and that those completely abstaining increased three fold. The process of reassessing participants after discharge may have important therapeutic value, as Cady (1980) found that follow up assessment has a direct, positive effect on outcome for alcohol relapse. However, Emerick (1982) believes that the longer the data is collected after the intervention has finished, the lower the rates of improvement are.

Perhaps this study should have restricted itself to working only with outpatients or those just about to be discharged. However, that would have severely limited the number of available participants. Additionally, like Bombardier et al's (1997) study, I wanted to use inpatients, who were at their most motivated and willing to participate. I also wanted to include those longer-term inpatients, with challenging behaviour because they are precisely the type of patient who would never have access to any further support or therapy for their alcohol problems.

2) Number of sessions.

The number of therapy sessions was limited to seven, again due to the time available. A less time constrained study would have provided the opportunity to discuss in more detail key aspects of the relapse programme and afford the possibility of consolidating sessions. There were aspects of the programme, particularly the thought processes session, which were quite abstract and complex. Given the cognitive difficulties that the participants had, particularly in attention, memory and reasoning ability, many of them may

have benefited from more time devoted to such a session. Howard et al (1986) state that the more therapy sessions a patient receives, the greater the improvement, although the relation is not linear. They found that approximately 40-55 percent of their patients had made significant improvements by session 8 and 60-75 percent by session 26. Using the learning disability literature as a comparison point (as high functioning individuals with a learning disability, also have cognitive impairments), the recommended number of training sessions for an equivalent treatment programme is between 12 hours (Moore et al 1997) and 102 hours (Cullen 1993). However, the current study was only intended as an initial pilot programme to test the feasibility of carrying out an alcohol relapse programme with this patient group. There is evidence from the brain injury literature, which highlights the effectiveness of short-term interventions on alcohol problems (Bombardier and Rimmele 1999; Cox et al 2003). Controlled studies have shown that as little as one hour of motivationally orientated alcoholism interventions, with trauma patients, can produce significantly greater reductions in post injury alcohol consumption, alcohol related problems and liver function tests compared to controls (Antti-Poika et al 1988; Chick et al 1985). So, although the opportunity to extend the number of sessions would have been helpful, the seven sessions that were delivered may have some long-term impact. However, it is likely, that given the length of stay in hospital for many of the patients, the programme would have to be revised just before their discharge.

3) Insufficient Power

The power of the study was compromised by, amongst other things, having a low sample size, a more heterogeneous participant sample than first thought and an over-estimation of the predicted effect size. This lack of power is not a difficulty for just this study. Reviews on psychological research have shown that most studies have insufficient power to detect a difference (Cohen 1992; Rossi 1990; Selhneier and Gigerenzo 1989).

The current study would have benefited from a greater number of participants in each group. The larger the sample size, the smaller the group differences that would have been needed for statistical significance, at the level of confidence used. There may have actually been differences between the two groups, as the alpha level used (ie. 0.05) is related to both the strength of the relation (ie. the effect size) and the sample size, not just the strength of the relation alone. The small number of participants available for this study, weakened the power and may have contributed to a statistically non-significant difference, when in fact the effect size produced was actually quite strong. Even when the null hypothesis is accepted, as in this study, there could still be a finding (ie. group differences) and a fairly potent effect. Saying that something is 'not significantly different' is not tantamount to 'no differences at all' or 'no effect' what so ever of the independent variable. This was seen in several of the measures (eg. the AASE: self efficacy and temptation scores), which produced large effect sizes but were still not statistically significant. Low sample numbers have been fairly common in research using head injured populations and this is particularly true in studies involving new treatment evaluations, as part of clinical initiatives. Other

published research in the same area, such as Bombardier and Rimmele's Motivational Interviewing Intervention (1999) only had nine participants, whilst Corrigan et al's (1994) substance abuse intervention programme only evaluated thirty-seven participants over a two-year period.

Another possible cause of weak power was the unforeseen heterogeneity of the participants. This heterogeneity consisted of both attitudinal and motivational factors that had not been controlled for at baseline, and participant's prior experiences of alcohol rehabilitation services. Based on clinical impressions of the participants in the programme, it appeared that some had agreed to take part, not because they genuinely wanted to change their alcohol-related behaviours but for a variety of other reasons, not previously anticipated. Several of the participants admitted that they had agreed to be part of the study because they had nothing else to do and were curious to see what the intervention would involve. Similarly, others appeared to have impulsively agreed to take part, without reflecting on what was being asked of them and then lost interest once they found out. This was reflected in the poor engagement several participants had with the programme.

For those who did engage well, clinical impressions suggest that they were getting something different from the programme than had been intended. Many seemed to value the supportive counselling that the programme involved, which gave them the opportunity to share experiences and tell their story. They were not necessarily interested in gaining new skills but instead wanted someone to listen and empathise with their difficulties. A number of those involved in the study claimed that this was the first

opportunity they'd really had to tell someone about their situation and express their anxieties about the effect of their head injury and the impact it would have when they returned home. The relapse skill teaching then became secondary to these basic therapeutic factors. This is consistent with research on the influential factors in therapy, which states that it is often the therapeutic relationship, rather than any specific technique utilised by the therapist, that is valued by the patient (Anthony and Liberman 1992). It is not that surprising that this aspect of the intervention was valued, given the characteristics and pre-morbid experiences of an individual with alcohol abuse problems and a head injury. Although anyone can acquire a head injury, it is more probable in men between the ages of 15-24, from lower socio-economic backgrounds and with a poor educational history (Naugle 1990; Goldstein & Levin 1990). These latter social factors are also associated with the aetiology of alcohol problems, as well as the large variety of other interacting factors, psychological and biological, described in the introduction (Marlatt & Rosenhow 1980; Tiffany 1990; White 1996). It is hypothesised that this patient group is likely to have a lot of negative self-beliefs, poor emotional and practical coping skills and little experience of psychological or counselling services. The relapse programme would then have been the first time these participants had access to such a service. In future, it would be useful to clarify with participants, the expectancies that they had about the intervention and to ensure that the participant is also receiving additional psychological support, in conjunction with the relapse programme.

At least two of the participants in the treatment group had prior experience of alcohol rehabilitation and both stated that they had not found it

useful. In both cases they had been seeing a community psychiatric nurse, who had referred them to Alcoholics Anonymous. They had not identified with the other members of their group and were unimpressed by the sermonising style that characterised the group. This seemed to produce an immediate negative response to any elements of the relapse programme that were similar to their previous experiences and contributed to heightened levels of resistance in session. Research has shown that using scare tactics or a strong imposition to change on participants is not effective in changing their alcohol use behaviours (Swadi and Zeitlin 1987). Rather, interventions applied in a non-threatening, informational format are more likely to help reduce resistance to alcohol related behaviour change. Whilst the relapse programme sought to follow this approach, it was delivered according to a set protocol and aspects of it may have been perceived as too autocratic. This is especially true for participants whose previous experiences may have sensitised them. Their feelings of resistance may then have been compounded by the programme. Prior experience of alcohol support organisations should have been an exclusion criteria for this particular study, as these participant's resistance to treatment and their evaluations of the programme may have depressed scores on the outcome measures.

The inclusion criteria for the study should have been more stringent, concerning the severity of participant's alcohol problem. Entry to the programme was based on the participant having a diagnosis of alcohol abuse recorded in their medical notes. Unfortunately, this label does not convey the variability in severity of abuse or the frequency and amount drunk. Greater alcohol use severity is associated with poorer treatment outcome (McLellan et

al 1994). It was clear from administering the programme that participants were not homogenous in their level of alcohol abuse. Therefore, a more rigorous quantitative measure of alcohol consumption should have been made at baseline.

The type of patient admitted and used in this study is perhaps not representative of the general head injured population. The patients from one of the hospitals used in the study, tend to have more complex presentations, with more serious impairments and behavioural difficulties, than a general sample. Additionally, many of the patients have other co-morbid psychological and psychiatric difficulties. These difficulties may have resulted in this sample having more extreme alcohol abuse problems pre-morbidly and the difficulties may also have acted as a mediating factor in therapy. The characteristics of the patients available for this study, would have affected not only the homogeneity of the participant sample but also the external validity of the research.

All the within subjects variability described in the preceding paragraphs, would have further increased the likelihood of finding no significant differences.

When calculating the number of participants necessary to achieve adequate power, the predicted effect size of the study may have been over estimated. There are no meta-analyses on alcohol interventions for head injured patients but a review of previous studies suggested that there would be large effect size (Bombardier and Rimmele 1999; Corrigan et al 1994; Chick et al 1985). Additionally, a review of the brief treatment literature concluded that there were no differences in outcome between brief and

extended forms of treatment (Bein et al 1992). A randomised control trial of problem drinkers in a primary care setting showed that two 10-15 minute counselling sessions conducted by doctors resulted in a 40 percent reduction in weekly alcohol consumption compared to an 18 percent reduction in controls (Flemming et al 1997). Also, the ability that people with alcohol difficulties have for making significant changes in their drinking without professional help has probably been underestimated. Sobell et al (1996) found that 75 to 77 percent of people, who do quit drinking, do so without any professional help. Given these findings, I was expecting the seven half hour therapy sessions, as well as the two assessment and de-briefing sessions involved in this study, to potentially have a large effect. However, it is acknowledged that there is a publishing bias in the literature, with only the most successful studies normally being reported. In retrospect, a more conservative effect size should have been chosen, although as a consequence more participants would need to be recruited. The difficulty of finding sufficient participants would most likely preclude this type of research being done.

Power could have been augmented by altering the alpha level from .05 to .1 or .2. This would be justifiable only because it has benefits for patient care and because power has already been compromised due to low numbers and heterogeneous participants. The study could have erred on the side of stating that an effect of the treatment exists, if there was the slightest evidence that it did. As it was, virtually all the means were in the direction predicted and several of the results were approaching significance. Ultimately, adopting this

less statistically stringent approach has benefits for the patients and improves their care.

4) Intervention characteristics and complications

Other reasons for the lack of results could be due to poor consistency and homogeneity in the administration of the relapse programme. Although the intention was to deliver exactly the same intervention, according to a set protocol, the reality was that certain participants engaged more with the programme in general or different aspects of it, which resulted in an unavoidable variability in how the treatment was implemented. It was sometimes difficult to redirect participants back onto the main focus of the session, when they wished to discuss a particularly salient issue to their alcohol problem. Although, every participant received the same content, each one would have had a very different experience of what the relapse programme was attempting to achieve. This variability in the independent variable would have reduced the effect size for the study even further.

The control participant group present with their own confounding factors. As all participants were inpatients, receiving multidisciplinary rehabilitation, they may have inadvertently received some elements that comprise the relapse programme. This is especially true, for those participants receiving other psychological rehabilitation. Any rehabilitation has the aim of awareness raising and skill teaching, attempting to empower the patient and raise their feeling of self-efficacy. This process would have confounded the self-efficacy measure of change between the treatment and control group, as any differences would have appeared weaker than they actually were. However, an examination of the within subject data for this measure, reveals that

patients in the control group did not feel any more self-efficacious, despite experiencing seven weeks of general multidisciplinary rehabilitation. It was impossible to control for participants, both in the treatment and control group, receiving advice on abstaining from drinking from staff on the ward. This means that in reality the control group cannot be said to have had 'no treatment' and perhaps thinking of this group as 'psychological care as usual' is more appropriate.

A final point concerns the effect of the questionnaires on the control patients. Just the process of being involved in the study as a control participant, followed by a series of questions about problems with alcohol, may have acted as a placebo for the patients, encouraging rumination about their alcohol difficulties. As a result of this they may have progressed further towards either contemplating the idea of change or of actually taking action. This is particularly true given the contemplation period a lot of head injured patients experience (Katz 2005) and the positive influence that data collection has on a patient's abstinence behaviour (Cady 1980). Again this would have confounded the measures on the SOCRATES motivation scale, between participant groups.

5) Questionnaires used

The questionnaires used may not have been as sensitive as anticipated and not the most appropriate for detecting a relation of interest. They may not have reflected anything clinically significant or the applied importance of the intervention. This was particularly true of the Alcohol Effects Questionnaire (AEFQ), which demonstrated such a variable performance that only the most robust relations could possibly emerge as statistically significant. The forced

choice format (of agree/disagree), whilst helpful to an extent for a head injured population, was also leading and susceptible to perseveration from the participants with frontal lobe impairments. Whilst the other two dependant measures, demanded more in terms of abstract reasoning and comprehension, participants tended not to get as 'cognitively stuck' on their replies. This may have been due to the intervening requirement to understand the more complex instructions, helping the participant redirect and refocus their attention and shift set onto a new task. The AEFQ also didn't really access any of the issues covered in the intervention and didn't reflect much of the content, except in a more abstract and generalised manner. An increase in score on the AEFQ corresponds to a rise in self-awareness and doesn't necessarily mean there has been an increase in knowledge caused by the intervention. The questionnaire evaluating change in knowledge should have been more direct and more tailored to the content of the programme.

Some items within the Alcohol Abstinence and Self-Efficacy scale were very demanding on verbal comprehension and verbal reasoning abilities and participants frequently had to ask for the questions to be repeated and clarified eg. 'how confident would you be that you wouldn't drink in the following situation: *when you are at a party and everyone else around you is drinking*'. A simplified version should have been used, or one that had supplemental visual information, such as pictorial representations of the situations. Additionally, this measure contained a number of cue situations the participants couldn't relate to. For example: how tempted are you to drink, '*when you are in agony because of withdrawing from alcohol.*' Perhaps this just reflects the varied severity of participant's alcohol abuse or their previous

experiences of attempting to quit drinking. The participants tended to respond to the AASE five point scale by sticking to the middle items, rather than evaluating themselves at either extreme. This resulted in a very conservative and homogenous pattern of results. This conservatism is understandable, given the lack of opportunity to test any newly acquired skills. Some form of summary questionnaire would have been useful, which asked a forced choice question about each of the factors the AASE is meant to examine eg. do you now feel more confident dealing with a low mood without alcohol ?

The Stages Of Change Readiness And Treatment Eagerness Scale (SOCRATES) has several items that ask the participant whether they consider themselves to be an alcoholic. This term tended to produce an automatic, negative response from a large number of the participants, even though many of the same participants were open to the fact that they had very serious problems with alcohol. This opposition to the term may indicate how reluctant such participants are to accept or identify with a label that carries such a great deal of connotations and baggage (eg. AA; the 12 Steps Programme; alcoholic stereotypes). Consequently, these 'alcoholic' items may have been scored in a less accurate and representative manner and may explain why the Recognition subscale of this measure was so uninformative.

The unreliability of the measures introduced a variability, which affected the sensitivity of the experimental test. A predicted relation may have been more evident with more sensitive and reliable measures.

6) The use of the Mini Mental State Exam (MMSE)

The Mini Mental State Exam (MMSE) is a brief assessment of mental

state that is widely used to assess cognitive functioning. It has a thirty-point scale that covers orientation, memory, language and visuo-spatial abilities. Prior to the study beginning it had been anticipated that comprehensive neuropsychological data would be readily available from the participant's medical notes. However, as it transpired, many of the participants had not been given a full neuropsychological assessment and where they had, the assessment tools tended to be quite varied. This then restricted the opportunity for making any comparison of cognitive ability between participants.

The only consistently available indicator of cognitive ability was the MMSE, which typically had been completed before the participant was transferred to the rehabilitation ward. As an assessment tool, the MMSE is too brief and insensitive to pick up anything but the grossest change in cognitive functioning. There are a number of major problems with the MMSE, which limit its usefulness and the conclusions that can be drawn from its results. Research has shown that it is only reliable for identifying moderate to severe cognitive impairments and that it is not sensitive enough to pick up changes in individuals with very high or very low intellectual abilities. It also cannot control for subjects with a poor educational background (White et al 2002). Therefore, the lack of correlations between cognitive level and outcome measures, on the relapse programme, may have been attributable to the poor reliability and accuracy of the MMSE. A comprehensive neuropsychological profile, for each participant, may have yielded more informative correlations.

In summary, I think the question addressed by this study is important but the methodological design needs to be more adequate. The intervention may have been poorly executed and consequently only managed to produce a small or non-detectable overall effect size, even when the effect size in a more natural environment may in fact be quite a bit larger. This was attributable to methodological flaws, such as weak power caused by low participant numbers and an over estimation of the effect size. Additionally, there may have been error within the experiment, as well as the subtle nuances related to the heterogeneity of procedures, subjects and conditions which all increased the variation and therefore diminished and negated any differences between groups.

In many regards the outcome of this pilot study are similar to a great deal of the results on evaluating the efficacy of treatment approaches. Kazden and Bass (1989) state that the majority of comparisons of different psychotherapy techniques actually show no difference in treatment outcomes. They claim this is often attributable to the weak power of the studies, given the small sample and effect sizes that characterize this type of research. The authors go to state that even with, what is considered, a large sample of seventy-five subjects divided into three comparison treatment groups, there would be a struggle to show statistically significant differences. These types of numbers would be difficult to achieve in a time and geographically restricted head injury population. Outside of very large national studies, which have the resources to sample large numbers of participants, most research such as this study would be compromised from the start, which would limit any future clinical initiatives. The obvious alternative is that, given that power inevitably

seems like it will be weak, not to carry out this type of research at all and the status quo maintained. However, providing a potentially successful, non-aversive intervention in a situation where there would otherwise be none, is argued as worthwhile. The intervention in this study, although not evaluated as a statistically significant success, seems to have had a positive effect on the participants and may have indirectly improved their well being. As mentioned previously, many participants remarked that they found the therapeutic process quite valuable. This could be attributable to the non-specific factors that compromise a great deal of therapeutic interventions, such as the nature of the therapeutic relationship and participant expectancy (Anthony & Liberman 1992). A study by Rothwell (1993) revealed that the factors patients rate as most useful in therapy include, 1) being able to talk to a person who is understanding, 2) having a direct answer given when a question is asked, 3) the therapist helping them to understand their problem better and 4) the therapist encouraging them to gradually face up to their problem situation. Participants in the current study may not have acquired the relapse prevention skills intended at the outset but they did comment that they felt more positive having discussed their difficulties with someone. Many stated that this was the first opportunity they'd had to bring up anxieties they were feeling regarding their future.

This finding has its origin in the paradigm with which we think of people with an acquired brain injury. Wolfensberger (1987) has developed a method of analysis of the ways in which beliefs about a certain group influence society's response and consequently the service model those societies require to be enacted. In the case of an acquired brain injury, the

person is viewed as a 'machine', which has 'broken down' and requires the technical response of 'fixing'. This is more commonly known as the 'medical model' and has diagnosis and disposal as its central components. Wolfenberger goes on to say that, as a society, we value individual perfection and our institutions try to protect us by socially engineering a separation and containing those that need 'fixing'. This separation is needed because those members of our society perceived as 'unfixable', carry societies projected fears about death. These fears are enacted through unconscious social processes of control.

Individuals with acquired brain injury, particularly those with cognitive impairments, are thought of defensively within this paradigm. They are seen as 'damaged' but can still aim for limited goals. Within a rehabilitation setting these goals are negotiated and sequenced, as part of workable strategy that is pragmatic, measurable and achievable in a set timeframe (Ward & McIntosh 2002). The rehabilitation process is normally accountable to an external body, which wants clear, quantifiable outcome results. Often the patients are marginalised in the structure and content of their rehabilitation and there is a disparity between their goals and those of the professionals. Ward and McIntosh (2002) go on to say that rehabilitation issues are often classified into physical, psychological, social or spiritual, which results in a separation of mind and body. For many rehabilitation teams, their goals are guided by the major categories of daily living activities (eg. self care, mobility) and tend to ignore the more personal concerns of the patient, which means crucial non-physical issues are failing to be addressed.

When psychological goals are set, they tend to be based around cognitive rehabilitation (e.g. learning to use a memory diary). Post (1995) believes this emphasis on the value of cognitive abilities is part of our 'hypercognitive' culture, which devalues the emotional and spiritual aspects of subjectivity and the interpersonal. As, individuals with a head injury frequently experience a loss of role and identity (Herbert 2000), the interpersonal environment should become more salient in a rehabilitation setting. Social relationships and the psychosocial environment help support personal identity and help establish a sense of resilience (Chester and Bender 1999). Unfortunately, these factors are difficult to make explicit and not easy to quantify. Kitwood (1997) believes that the concept of 'malignant social psychology' should be adopted as a challenge to the old 'medical model' paradigm. This involves a person centred thinking style and pattern of care, in which it is our responsibility to learn how to be fully human in our relations with people who are vulnerable because of their acquired brain injury.

There should be a move away from the old paradigm of segregating patients in institutions, in order to 'fix' them, according to daily living activity goals, set by the rehabilitation team. A newer paradigm is clearly needed and one in which individuals with acquired brain injuries are made to feel emotionally supported, are allowed to tell their story and develop a sense of personal identity and role through interpersonal relationships. Perhaps less emphasis should be placed on establishing and measuring indicators of change and more time spent relating to the patient on a personal level. The reaction of the participants in this study and the non-specific factors discussed earlier, reflect that need. Consequently, continuing this research, as part of a

clinical initiative, is not only justified as it helps develop a new treatment approach but can also indirectly benefit the participants.

4.03 Observations and recommendations for the programme

Carrying out the relapse programme demonstrated that it is possible to actively involve patients with a head injury in treatment for alcohol abuse. Additionally, it highlighted the willingness these patients had to engage in a treatment approach, not normally offered to them. They all demonstrated, to some degree, that they could understand and participate in complex components of the intervention, given sufficient practice and a simple and engaging format.

The participants rated the motivation enhancing session (ie. the Pros and Cons of drinking) as the most useful, although the more cognitively capable participants found it slightly less helpful. As had been suggested previously, this may have been because they felt the session was too simplistic or unnecessary given their ability to independently self-reflect and the fact that they were already sufficiently motivated to change. Similarly, the higher functioning participants found the assertiveness and problem solving sessions less useful. All participants, irrespective of cognitive ability, rated the Thought Processes session as least helpful and most illogical. This highlights the difficulty achieving an appropriate balance for the relapse programme and the restrictions imposed by running a research trial. In clinical practice, the programme would not be delivered as a set protocol but would have been adapted according to individual need. A possibility would be to have a checklist of the components to be covered in the programme but with the

flexibility of emphasising particular aspects of it according to that participant's individual requirements. The baseline assessment of motivation, knowledge, self-efficacy and cognitive ability would then determine the particular path of therapy.

The session exploring High Risk Situations and how to cope with them and the session on helping participants achieve a more balanced lifestyle, were also rated highly. It would be worth consolidating these sessions and expanding their content. Conversely, as the thought processes and assertiveness sessions were not valued by the participants, it would be worth exploring further why that was and whether it was possible to deliver them in a more helpful format. An idea for future research would be to carry out a qualitative study with these patients to determine what details of the programme were and weren't the most helpful.

Based on comments from the participants and my own observations, the following adaptations to the relapse programme appeared to be useful. Clearly structuring the sessions, with a visual agenda that the participant could follow, helped keep the sessions focused and easy to attend to. It meant that the expectations for the session were clear and that the content could be broken down into a series of small steps. Also, using an agenda meant that individual components of the session could be contextualised and provided the opportunity for participants to ask questions.

Using handouts, in a workbook format, limited the amount of information that could be presented each session and allowed extra time for processing and reviewing the material. It also provided complementary visual support, for what was being discussed, which may have helped ameliorate

some of the attentional difficulties that participants presented with. It had been intended that the participants use the handouts in between sessions, to revise what they had learnt but it was not possible to ensure that participants were consistently prompted to do so. In future, it would be worth utilising additional external memory strategies, such as a memory diary and audio taping the handouts.

Another method of delivering the information, which participants appeared to find beneficial, was using 'word card' exercises. These were based on techniques of working with Dysexecutive problems, suggested by Malia et al (1997). Instead of brainstorming ideas, a selected group of options were already available and printed on laminated cards, which the participant sorted through. The cards provided a visual cue for discussion and meant that those participants with impairments in generating ideas and search strategies, could still be involved in the session.

Langley et al (1990) state that skills training is most effective when the behaviours being trained are in specific situations, as opposed to the therapist just providing information or global strategies. They claim this is due to difficulties participants have in generalisation and inference. These difficulties may be exacerbated in head injured patients who have cognitive impairments arising from damage to the frontal lobes (Baddeley 1986). They also state that providing a broader range of responses helps enhance the participant's resilience. As this relapse programme was intended to be a brief intervention for inpatients, role-plays had to be used to facilitate this process. Howells (2000) states that role plays and repeated practice are the two most important strategies to use with individuals with a cognitive impairments, if sufficient

carry over and application is to be achieved. However, many of the participants did not feel that comfortable engaging in these and the session with the most role plays in it, the assertiveness session, was consistently rated poorly in terms of usefulness and logic. Perhaps if the treatment was extended and a closer therapeutic relationship was given the opportunity to be established, then the role-plays would be more successful.

Carrying out this type of work with head injured participants does require additional training and experience beyond that needed for a traditional alcohol service. The therapist has to demonstrate a far greater non-contingent positive regard for the participant and be wary of misinterpreting the participant's, sometimes, inappropriate behaviour as treatment resistance. Therefore, it is most important for the therapist to ensure that they are receiving supervision, whilst running the programme.

4.04 Amendments and future research

Suggestions for amendments to this project and future research are included in the following section. Several of the suggestions have already been mentioned in other parts of the discussion but are briefly included in this section for completeness.

A major amendment to the study would be altering the method of evaluation used for the relapse programme. The Alcohol Effects Questionnaire, should be replaced with a measure more reflective of the informational component of the programme and used to gauge the amount learnt by the participant over the course of treatment. The SOCRATES measure should not be used an outcome measure at all. Instead, it should be

used as a screening tool to identify appropriately motivated participants. A tiered system of therapy approaches would be available depending on the stage of change the participant was at. For example, Motivation Enhancement Therapy for those in the pre-contemplative stage and Relapse Prevention for those in the action stage. The SOCRATES measure could be still be used to chart progress and help predict possible difficulties in advance. Structured role-plays could also be used to evaluate progress. The main outcome measure should be one measuring self-efficacy, as this constitutes the main theoretical approach behind relapse prevention work (Warnigaratne et al 1990). The AASE could be used but needs adapting, so it is less complex and more accessible for a brain injury population. If the programme is extended to include follow up sessions in the community, a quality of life or alcohol impact measure should be used to determine treatment success, not the frequency of alcohol drunk.

As mentioned in the methodological criticism section, participants tended to be more heterogeneous than first thought. Therefore, future participants should be more rigorously screened, for previous experiences of alcohol treatment programmes, for the quantity of alcohol they consumed prior to their head injury and the severity of their alcohol abuse problem. Treatment approaches would then have to be adapted to compensate for the additional difficulties these participants present with e.g. higher resistance. If this study were to be replicated, the exclusion criteria would have to be stricter and exclude those participants just described.

It would be beneficial to clarify, with the participants, the expectations they have of the relapse programme before beginning and to perhaps provide

more detailed information about the nature of the approach. Providing extra therapy in conjunction with the relapse programme, from another therapist, may help keep the focus of the sessions primarily on relapse issues.

A follow-up qualitative study investigating the experiences the participants had would be useful. It would hopefully elaborate on which aspects of the programme they found beneficial and which techniques were most helpful. This may result in more innovative ways of presenting the information in the programme, such as using audio-tapes or video taping sessions.

It would be useful to have a measure or indication of potential participant's level of engagement in therapy, prior to selecting those for treatment. This could be used to roughly predict those who would commit to the intervention and remain engaged over the course of treatment. An estimation of this could be established by examining that patient's level of engagement in rehabilitation with other disciplines and then determining a percentage cut off point for poor engagement. As one of the principles behind this research was not to exclude challenging patients, those not meeting an adequate level of engagement, could then be referred for a Motivational Enhancement Therapy instead.

One of the criticisms of this pilot study was that the power was weak, meaning beta was high and more likely that a type II error was committed. One way to readdress power is to increase the sample size. For a large effect size, at power .8, about thirty participants would be needed per group (an additional forty to augment the sample collected for this current study). However, for a more conservative estimate of effect (medium effect size),

sixty-four participants would be needed per group. These types of figures are just not feasible for a brief pilot study involving this patient group and illustrate one of the limitations of research in the head injury field. It would be a struggle to get that number of participants in Lothian, particularly if the exclusion criteria become more stringent. Therefore, if the study were continued, it would need to be extended to a multi site study, probably over the course of several years. This pilot study though, does indicate the possibility of doing both this type of research and therapy with this patient group and the value that such future research might contribute to their rehabilitation.

If the research were to be repeated, it would be beneficial to have independent raters, administering the questionnaires and who were blind to the treatment status of the participants. It is feasible that as I was aware of the study's hypotheses, I may have inadvertently biased or influenced the response of the participants.

The absence of differences between groups may also have resulted from the amount of treatment the participants received. Consequently, it may be useful to have a number of groups, receiving different amounts of relapse treatment and to then compare these different amounts with each other for efficacy.

In terms of predictive validity, the basic cognitive profile as measured by the MMSE was not particularly enlightening. As has already been discussed, in the methodological criticism section, this was probably due to the validity and reliability of the MMSE. One of the intentions for this study was to explore the data, post hoc, to find any correlations between cognitive impairment and outcome on both the questionnaire measures and the session

evaluation questionnaires. The cognitive profile data could then have been used as predictor variables for future clinical work, to determine who would benefit most from the intervention or which aspects of it. As the MMSE was not sensitive or accurate enough to pick up the variability, it would be worth repeating the research but completing a comprehensive neuropsychological profile for each participant first and then making the focus of the study the uncovering of these predictor variables. From working with the participants in this study, my own clinical judgement would suggest that memory problems are not the most handicapping of difficulties to overcome in designing an intervention programme. Instead, the disorientation associated with the Dysexecutive Syndrome and the agitation and restlessness associated with damage to the anterior-cingulate frontal circuit (Mega and Cummings 1994), proved to be the most challenging neuropsychological problems. Patients who could not orientate to time and place and who could not control the impulse to wander did not engage well with the treatment.

If this study is replicated and another negative result found, then that could be informative in its own right, as it indicates that there may be only certain conditions under which it is possible to obtain significant results. It may be that a hospital inpatient setting is not the most appropriate environment or time, to carry out this type of intervention. A number of hypotheses to explain this have already been touched on. The impact of the relapse programme may be diluted for the participant, as it is just one of many interventions they are receiving in hospital. If the rehabilitation was more focused, it may be more successful. Also, an inpatient hospital environment provides little opportunity to practice and test out the relapse skills, so there is a gulf

between the academic 'knowing what to do' and the actual experience of dealing with a possible relapse situation. A community-based programme would also open up the possibility of bringing concrete, 'real world' examples to therapy. The participant would then become empowered and more self sufficient, as they work collaboratively with the therapist, trying to practically solve the problem in session.

There is a recommendation in the relapse literature for participants who have gone through the programme to repeat it periodically, at three or six month intervals (Warnigaratne et al 1990). Failing that, follow up and top up sessions should be provided, as they often play a vital part in deciding the eventual outcome of the programme. Hunt et al (1971) state that relapse rates are generally at their highest within the short period following the initial treatment phase and that supplementary sessions should be directed at this point. There is also a direct relationship between the maintenance of change and maintenance of contact with the therapist (Janis 1983). Given this evidence, the participants who received the treatment as part of this research study should be seen for further sessions to consolidate and maintain any of the gains they made. However, realistically, this will only be possible once resources are in place to develop a multidisciplinary community treatment team, which could devise long term care packages for these participants. There is movement towards this process as the Scottish Executive have stated in their workforce planning report (SIWPG stage 2 report), that more neuropsychologists and rehabilitation specialists need to be recruited. They have also outlined recommendations for the setting up of new services.

4.05 Conclusions

The results of this study, although non-significant, are promising. Most of the results represent a non-significant trend in the hypothesised direction and there was a moderate to large effect size on several of the measures used. There are three main conclusions drawn from this research study.

Firstly, the results from this study and previous brief alcohol interventions suggest that it may be possible to increase the tendency towards abstinence or controlled drinking, that occurs after a traumatic brain injury. The conclusion is not that relapse prevention is effective with a head-injured population but that it is possible to conduct such therapy in an acute setting and needs further investigation. If so, early intervention for alcohol abuse could possibly help prevent some of the secondary complications associated with alcohol use in the brain injured population.

Secondly, rehabilitation with this participant group has not been widely considered, as it was thought to have a negligible effect on outcome. Effectively this is saying that there are people inherently less worthy of rehabilitation than others. Rehabilitation should be available to all and it is the responsibility of the rehabilitation professionals to devise appropriate plans, adapted to that individuals need. The presence, or in this case lack, of a significant change in participant's intention to abstain from drinking is perhaps not the issue. Instead, it is notable that the participants in the study all willingly participated and wanted help to overcome their problems with alcohol. This highlights the current lack of appropriate resources in light of the obvious demand.

Thirdly, even though there was no significant success, according to the measures used, the participants seemed to value the therapeutic contact. Perhaps this indicates that there should be less emphasis on rigid goal setting and reaching targets, when determining who benefits from rehabilitation and why. The non-quantifiable aspects of developing a relationship with the participants, in which they felt supported and understood, may have been equally important.

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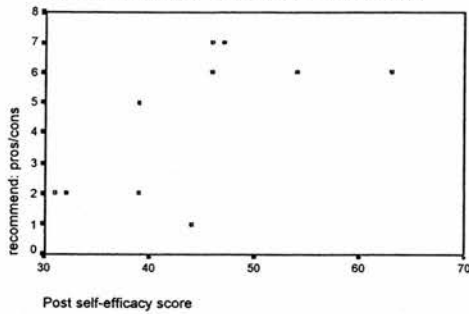
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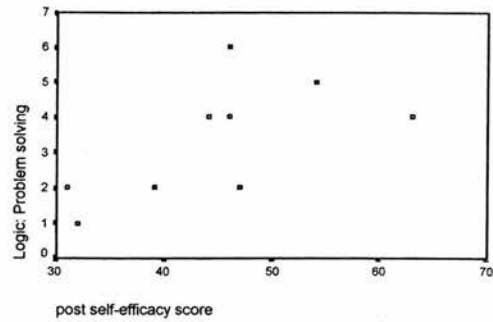
Post Hoc Correlation graphs

1) AASE: self-efficacy and temptation

Correlation between post self-efficacy
and recommendation of pro/cons session

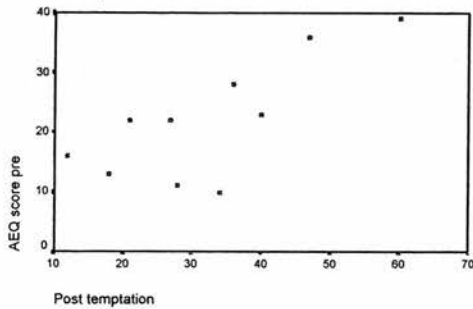


Correlation between post self efficacy
and logic of problem solving session

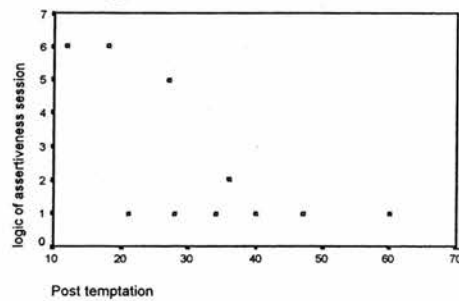


Self-efficacy graphs

Correlations between post temptation
and pre AEQ score



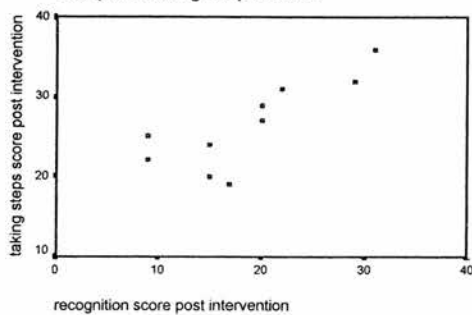
Correlations between post temptation
and logic of assertiveness session



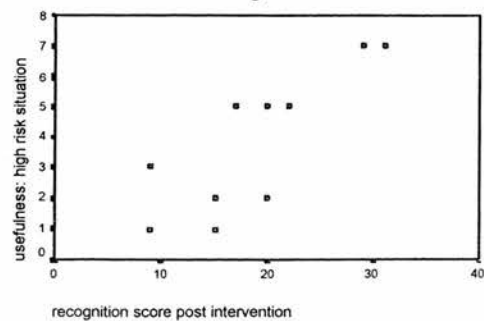
Temptation graphs

2) SOCRATES: Recognition, Ambivalence and Taking Steps

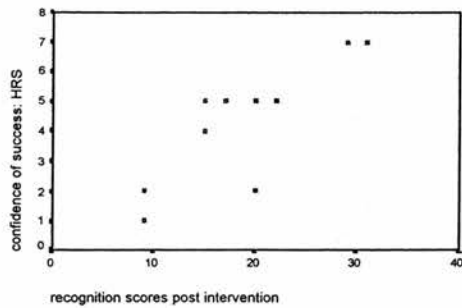
Correlations between post recognition
and post taking steps score



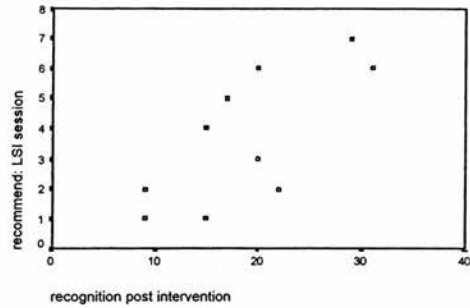
Correlations between post recognition
and usefulness of high risk situation



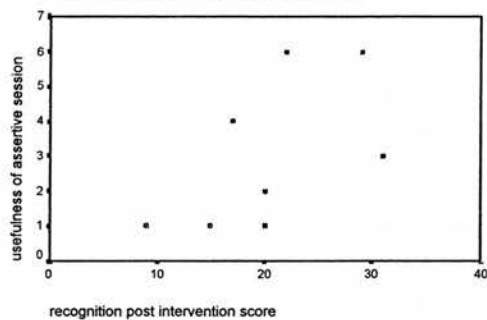
Correlations between post recognition
and confidence in high risk situation



Correlations between post recognition
and recommendation of life style imbalance

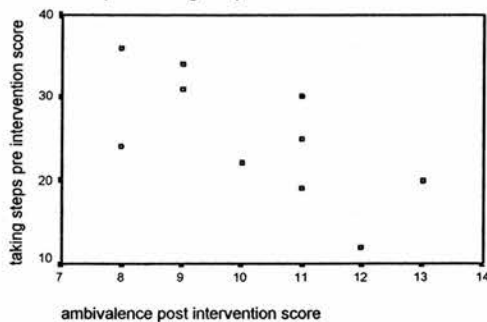


Correlations between post recognition
and usefulness of assertiveness



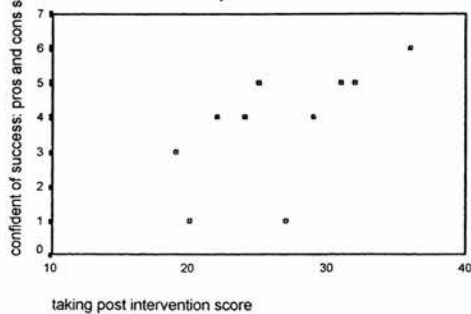
Recognition graphs

Correlations between post ambivalence
and pre taking steps scores

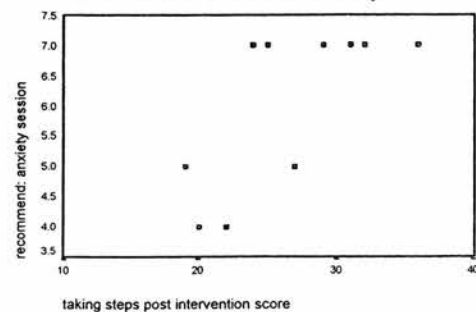


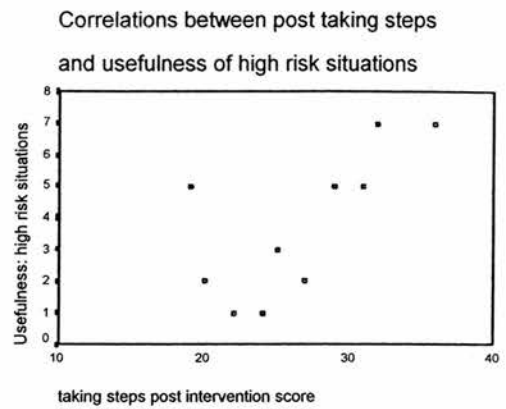
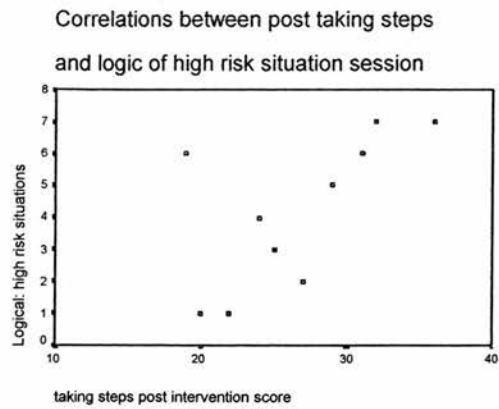
Ambivalence graph

Correlations between post taking steps
and confidence in pro/cons session



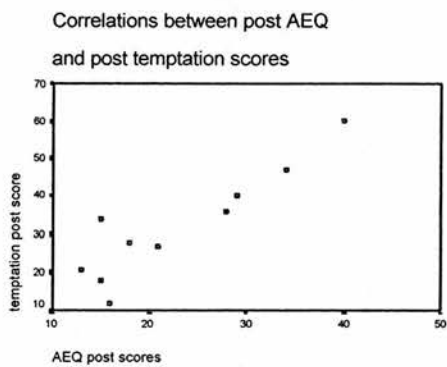
Correlations between post taking steps
and recommendations for anxiety





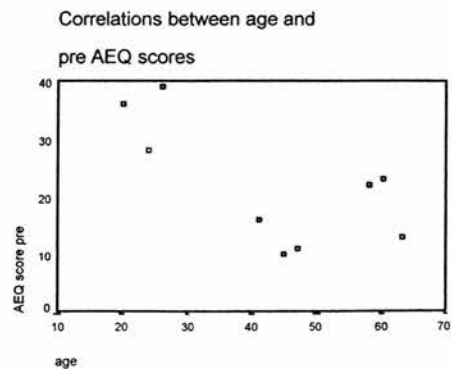
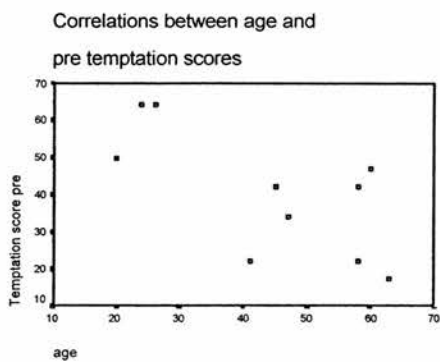
Taking Steps Graphs

3) Alcohol Effects Questionnaire

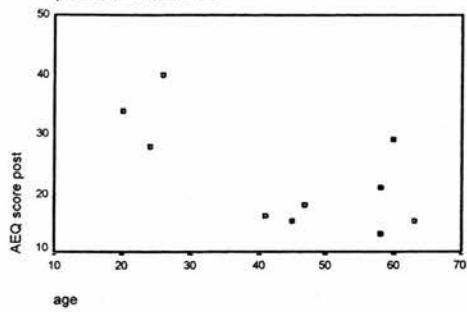


AEQ Graph

4) AGE



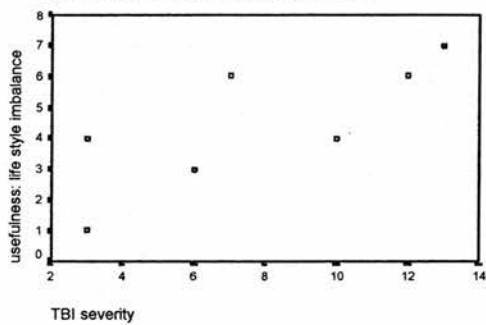
Correlations between age and
post AEQ scores



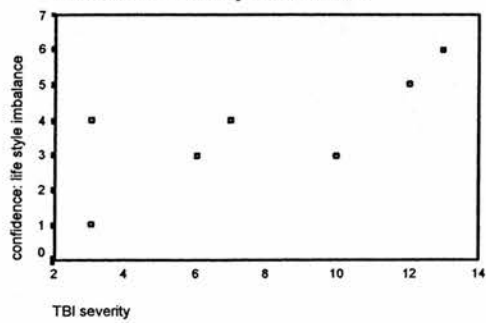
AGE Graphs

5) TBI Severity

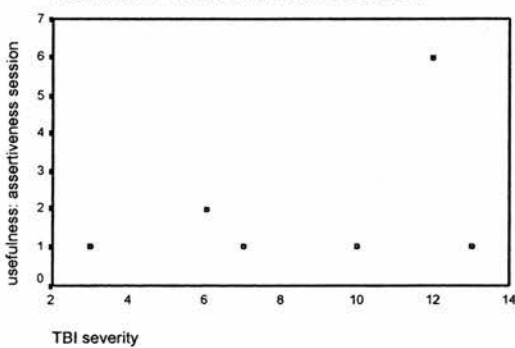
Correlations between TBI severity and
usefulness of life style imbalance



Correlations between TBI severity and
confidence in life style imbalance



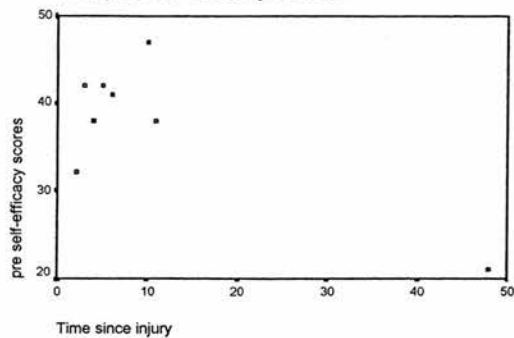
Correlations between TBI severity and
usefulness of assertiveness session



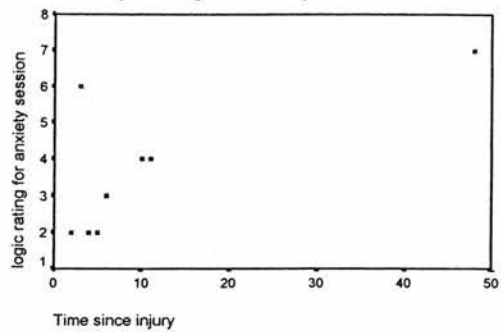
TBI severity graphs

6) Time Since Injury

Correlations between time since injury
and pre self efficacy scores



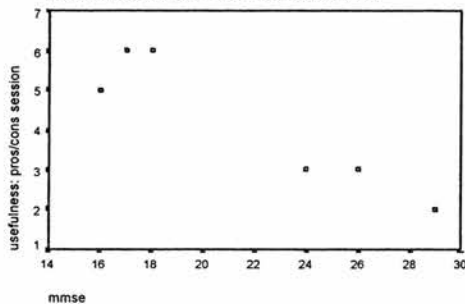
Correlations between time since injury
and logic rating for anxiety session



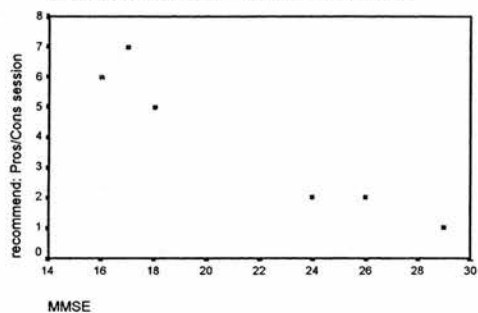
Time Since Injury Graphs

7) MMSE scores

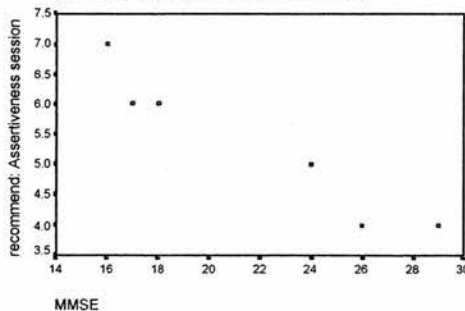
Correlations between MMSE and
usefulness of pros and cons session



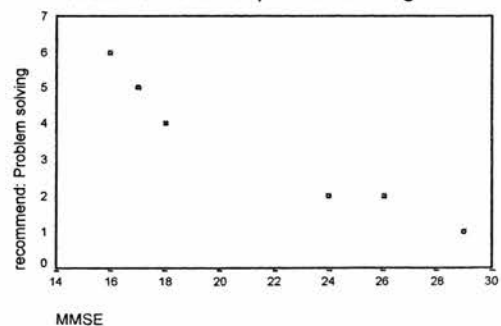
Correlations between MMSE and
recommendation: Pros/Cons session



Correlations between MMSE and
recommendation of assertiveness



Correlations between MMSE and
recommendation of problem solving



MMSE Graphs

APPENDIX 1

Mr Christopher/ M Harding
Trainee Clinical Psychologist
NHS Lothian
Clinical Psychology Department
Robert Ferguson Unit
Royal Edinburgh Hospital, Edinburgh

11 March 2005

Dear Mr Harding

Full title of study: *The evaluation of an adapted alcohol relapse prevention programme, for individuals with an acquired brain injury*
REC reference number: 05/S1103/2

Thank you for your letter of 07 March 2005, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document and guarantee that version numbers for all literature issued to participants and controls will be dated (see list below). You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document Type:	Version:	Dated:	Date Received:
Application	1	19/01/2005	26/01/2005
Application	2 - Amended sections only	19/01/2005	07/03/2005
Investigator CV	Christopher Harding		26/01/2005
Investigator CV	Dr Suzanne O'Rourke	28/01/2005	26/01/2005
Protocol	1	19/01/2005	26/01/2005
Covering Letter			26/01/2005
Copy of Questionnaire	2 - Session Evaluation Questionnaire (UNDATED)	07/03/2005	07/03/2005
Copy of Questionnaire	Validated - HSTAT	15/12/2004	26/01/2005
Copy of Questionnaire	8 - Validated - Socrates		26/01/2005
Copy of Questionnaire	8A - Socrates - Personal Drinking Questionnaire		27/01/2005
Copy of Questionnaire	8D - Socrates - Personal Drug Use Questionnaire		27/01/2005
Copy of Questionnaire	8.0 - Socrates Scoring Form		27/01/2005

	- 19 Item Version		
Copy of Questionnaire	8A - Secrates Profile Sheet - 19 Item Version		27/01/2005
Copy of Questionnaire	Guidelines for Interpretation of Socrates 8 Scores		27/01/2005
Copy of Questionnaire	ADAI DMC Validated Alcohol Abstinence Self- Efficacy Scale	14/04/2003	26/01/2005
Participant Information Sheet	2 - for Participants involved in the Treatment Programme (UNDATED)	07/03/2005	07/03/2005
Participant Information Sheet	2 - for Controls (UNDATED)	07/03/2005	07/03/2005
Participant Consent Form	2 - (UNDATED)	07/03/2005	07/03/2005

Management approval

The study should not commence at any NHS site until the local Principal Investigator has obtained final management approval from the R&D Department for the relevant NHS care organisation.

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

REC Reference Number	05/S1103/2	Please quote this number on all correspondence
-----------------------------	-------------------	---

With the Committee's best wishes for the success of this project,

Yours sincerely,



Chair
Lothian Local Research Ethics Committee 03
 E-mail: elizabeth.harden@lhb.scot.nhs.uk

Enclosures

List of names and professions of members who were present at the meeting and those who submitted written comments

Standard approval conditions

Site approval form (SF1)

APPENDIX 2

SCOTTISH NEUROBEHAVIOURAL REHABILITATION SERVICE

Dr Alan Carson
Consultant Neuropsychiatrist

Dr Lorna Langrell
Associate Specialist

Robert Fergusson Unit
Royal Edinburgh Hospital
Morningside Terrace
Edinburgh EH10 5HF

Phone: 0131 537 6857
Fax: 0131 537 6857
Email: Mhairi.Campbell@lpct.scot.nhs.uk

CONSENT FORM-VERSION 2

Consent by Patient to participate in:

.....

Name of Patient:

Name of study:

Principal Investigator:

I have read the patient information sheet on the above study and have had the opportunity to discuss the details with and ask questions. The researcher has explained to me the nature and purpose of the tests to be undertaken. I understand fully what is proposed to be done.

I have agreed to take part in the study as it has been outlined to me, but I understand that I am completely free to withdraw from the study or any part of the study at any time I wish and that this will not affect my continuing medical treatment in any way.

I understand that these trials are part of a research project designed to promote medical knowledge, which has been approved by the Lothian Research Ethics Committee, and may be of no benefit to me personally. I also understand that, my Consultant has either been informed that I have taken part in this study or has referred me into the study.

I hereby fully and freely consent to participate in the study which has been fully explained to me.

Signature of Patient:

Date:

I confirm that I have explained to the patient named above, the nature and purpose of the tests and intervention to be undertaken.

Signature of Investigator:

Date:

SCOTTISH NEUROBEHAVIOURAL REHABILITATION SERVICE

Dr Alan Carson
Consultant Neuropsychiatrist

Dr Lorna Langrell
Associate Specialist

Robert Fergusson Unit
Royal Edinburgh Hospital
Morningside Terrace
Edinburgh EH10 5HF

Phone: 0131 537 6857
Fax: 0131 537 6857
Email: Mhairi.Campbell@lpct.scot.nhs.uk

INFORMATION LEAFLET FOR PARTICIPANTS INVOLVED IN THE TREATMENT PROGRAMME VERSION 2

Title of the study:

The evaluation of an adapted alcohol relapse prevention programme for individuals with an acquired brain injury.

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with relatives or your Consultant if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Purpose of the study:

Many people with acquired brain injuries have a history of heavy alcohol use and alcohol is often partly involved in causing the injury. Additionally, a large number of people, consume alcohol to dangerous levels after they leave hospital. This is a major problem when trying to recover from a head injury. Alcohol is known to have a more serious effect on people with a brain injury and raises the chances of that person having another injury.

Often people find it useful to learn how to cope without alcohol, when they leave hospital. This should be done as part of an alcohol relapse programme. Unfortunately, there are no services designed specifically for people with head injuries, who want to cut down on their drinking.

This current study, which you are being asked to participate in, is one of the first attempts to offer such a service. We need to know what the best way of helping treat people is, which is why we need to test out the materials in the programme and see what is most helpful.

Why have I been chosen?

You have been chosen as a potential participant because of your history of alcohol use and the problems that it may cause you in the future. However, 19 other patients will be participating in the study.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason. This will not affect the rest of the rehabilitation you receive.

What will happen to me if I take part?

You will have seven sessions of therapy, each lasting about 45 minutes. These sessions will try and help teach you ways of coping with alcohol when you leave hospital. For example, how to cut down your drinking and how to refuse alcohol in different situations. All sessions will take place on the hospital ward, in a private room.

There will also be two other sessions, one at the start and one at the end. In these I will ask you questions about how you feel about drinking, your motivation to cut down on drinking and what you know about the effect alcohol has on a head injury. There will also be questions about the good and bad parts of the programme. Answering these questions will take about 40-60 minutes each time.

What are the possible disadvantages and risks of taking part?

We don't think the study will cause you any harm. However, it is possible that discussing difficult parts of your life from before your injury, may stir up some distressing emotions and thoughts.

What are the benefits of taking part?

You will hopefully develop new skills, which will help you manage better when you leave hospital. These skills will include relaxation, stress management, drink refusal and assertion. You will also hopefully learn something about yourself and may find you feel more positive and confident. Your knowledge about the negative effects of alcohol may also increase.

All these benefits increase the quality of your life when you are discharged and lower the chances of future head injuries.

Will my taking part in this study be kept confidential?

All information which is collected about you during the course of the research will be kept strictly confidential. Any information about you which leaves the hospital will have your name and address removed, so you cannot be recognised from it.

What will happen to the results of the research study?

The results will be published in a thesis and stored at Edinburgh University Library, where you would be able to get a copy. The results may also be published in a scientific journal and presented at a conference to other clinical psychologists. You will not be identified in any report or publication.

Who has reviewed the study?

This study has been reviewed by the Lothian Research Ethics Committee.

Contact for further information.

Christopher Harding
Trainee Clinical Psychologist
Robert Ferguson Unit
Royal Edinburgh Hospital
0131 537 6214

SCOTTISH NEUROBEHAVIOURAL REHABILITATION SERVICE

Dr Alan Carson
Consultant Neuropsychiatrist

Dr Lorna Langrell
Associate Specialist

Robert Fergusson Unit
Royal Edinburgh Hospital
Morningside Terrace
Edinburgh EH10 5HF

Phone: 0131 537 6857
Fax: 0131 537 6857
Email: Mhairi.Campbell@lpct.scot.nhs.uk

INFORMATION LEAFLET FOR CONTROL PARTICIPANTS VERSION 2

Title of the study:

The evaluation of an adapted alcohol relapse prevention programme for individuals with an acquired brain injury.

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with relatives or your Consultant if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Purpose of the study:

Many people with acquired brain injuries have a history of heavy alcohol use and alcohol is often partly involved in causing the injury. Additionally, a large number of people, consume alcohol to dangerous levels after they leave hospital. This is a major problem when trying to recover from a head injury. Alcohol is known to have a more serious effect on people with a brain injury and raises the chances of that person having another injury. Often people find it useful to learn how to cope without alcohol, when they leave hospital. This should be done as part of an alcohol relapse programme. Unfortunately, there are no services designed specifically for people with head injuries, who want to cut down on their drinking. This current study, which you are being asked to participate in, is one of the first attempts to offer such a service. We need to know what the best way of helping treat people is, which is why we need to test out the materials in the programme and see what is most helpful.

Why have I been chosen?

You have been chosen as a potential participant because of your history of alcohol use and the problems that it may cause you in the future. However, 19 other patients will be participating in the study.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason. This will not affect the rest of the rehabilitation you receive.

What will happen to me if I take part?

You will see me on three different occasions over the course of eight weeks. On these occasions I will ask you questions about how you feel about drinking, your motivation to cut down on drinking and what you know about the effect alcohol has on a head injury. I will see you for about 40-60 minutes each time. The meetings will be on the wards, where I normally see you and will be arranged together, at times that are convenient.

After this you will then see me for seven sessions of therapy, each lasting about 45 minutes. These sessions will try and help teach you ways of coping with alcohol when you leave hospital. For example, how to cut down your drinking and how to refuse alcohol in difficult situations. All sessions will take place on the hospital ward, in a private room.

What are the possible disadvantages and risks of taking part?

We don't think the study will cause you any harm. However, it is possible that discussing difficult parts of your life from before your injury, may stir up some distressing emotions and thoughts.

What are the benefits of taking part?

You will hopefully develop new skills, which will help you manage better when you leave hospital. These skills will include relaxation, stress management, drink refusal and assertion. You will also hopefully learn something about yourself and may find you feel more positive and confident. Your knowledge about the negative effects of alcohol may also increase.

All these benefits increase the quality of your life when you are discharged and lower the chances of future head injuries.

Will my taking part in this study be kept confidential?

All information which is collected about you during the course of the research will be kept strictly confidential. Any information about you which leaves the hospital will have your name and address removed, so you cannot be recognised from it.

What will happen to the results of the research study?

The results will be published in a thesis and stored at Edinburgh University Library, where you would be able to get a copy. The results may also be published in a scientific journal and presented at a conference to other clinical psychologists. You will not be identified in any report or publication.

Who has reviewed the study?

This study has been reviewed by the Lothian Research Ethics Committee.


Contact for further information.

Christopher Harding
Trainee Clinical Psychologist
Robert Ferguson Unit
Royal Edinburgh Hospital
0131 537 6214

APPENDIX 3

HSTAT

Health Services/Technology Assessment Text

National
Library
of Medicine [Short Contents](#) | [Full Contents](#)[Other books @ NCBI](#)

Search	
<input type="text"/>	<input type="button" value="Go"/>
This book	All
books	
PubMed	

AHCPR Archived reports, Put Prevention Into Practice and Minnesota Health Technology Advisory Committee → SAMHSA/CSAT Treatment Improvement Protocols → 35. TIP 35: Enhancing Motivation for Change in Substance Abuse Treatment → Appendix B—Screening and Assessment Instruments

Alcohol Effects Questionnaire

Navigation

About this book

SAMHSA/CSAT Treatment Improvement Protocols

35. TIP 35: Enhancing Motivation for Change in Substance Abuse Treatment

Executive Summary and Recommendations

Chapter 1—Conceptualizing Motivation And Change

Chapter 2—Motivation and Intervention

Chapter 3—Motivational Interviewing as a Counseling Style

Chapter 4—From Precontemplation to Contemplation: Building Readiness

Chapter 5—From Contemplation to Preparation: Increasing Commitment

Chapter 6—From Preparation to Action: Getting Started

Chapter 7—From Action to Maintenance: Stabilizing Change

Chapter 8—Measuring

This questionnaire consists of a series of statements that describe possible effects following alcohol use. We would like to find out about your present beliefs about alcohol.

Please read each of the statements and respond according to your experiences with a **heavy (5 drinks or more per occasion)** amount of alcohol. If you believe alcohol sometimes or always has the stated effect on you, check AGREE. If you believe alcohol never has the stated effect on you, check DISAGREE.

Then, in the column to the far right, fill in the number that **best corresponds to the strength of your belief**, according to the following scale:

1 = Mildly Believe

10 = Strongly Believe

For example, if you strongly believe that alcohol makes you more intelligent, you would check AGREE and enter a "10" in the far column.

Please answer every question without skipping any.

For a **HEAVY (5 or more drinks per occasion)** amount of alcohol

	Agree	Disagree	Strength of Belief
1. Drinking makes me feel flushed.	<input type="text"/>	<input type="text"/>	<input type="text"/>
2. Alcohol decreases muscular tension in my body.	<input type="text"/>	<input type="text"/>	<input type="text"/>
3. Drinking makes me feel less shy.	<input type="text"/>	<input type="text"/>	<input type="text"/>
4. Alcohol enables me to fall asleep much more easily.	<input type="text"/>	<input type="text"/>	<input type="text"/>
5. I feel powerful when I drink, as if I can really influence others to do what I want.	<input type="text"/>	<input type="text"/>	<input type="text"/>
6. I'm more clumsy after I drink.	<input type="text"/>	<input type="text"/>	<input type="text"/>
7. I'm more romantic when I drink.	<input type="text"/>	<input type="text"/>	<input type="text"/>
8. Drinking makes the future seem brighter to me.	<input type="text"/>	<input type="text"/>	<input type="text"/>
9. If I have had alcohol it is easier for me to tell someone off.	<input type="text"/>	<input type="text"/>	<input type="text"/>
10. I can't act as quickly when I've been drinking.	<input type="text"/>	<input type="text"/>	<input type="text"/>
11. Alcohol can act as an anesthetic for me; that is, it can deaden the pain.	<input type="text"/>	<input type="text"/>	<input type="text"/>
12. I often feel sexier after I've been drinking.	<input type="text"/>	<input type="text"/>	<input type="text"/>
13. Drinking makes me feel good.	<input type="text"/>	<input type="text"/>	<input type="text"/>
14. Alcohol makes me careless about my actions.	<input type="text"/>	<input type="text"/>	<input type="text"/>
15. Alcohol has a pleasant, cleansing, tingly taste to me.	<input type="text"/>	<input type="text"/>	<input type="text"/>
16. Drinking increases my aggressiveness.	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Components of Client
Motivation**

Chapter 9

— Integrating

Motivational

Approaches Into

Treatment Programs

Chapter 10

— Directions for

Future Research

Appendix B

— Screening and

Assessment

Instruments

Appendix C

— Ordering

Information for

Assessment

Instruments

Appendix D

— Resource Panel

Appendix E —Field

Reviewers

Figures

Appendix A —

Bibliography

- | | | | |
|---|-------|-------|-------|
| 17. Alcohol seems like magic to me. | _____ | _____ | _____ |
| 18. Alcohol makes it hard for me to concentrate. | _____ | _____ | _____ |
| 19. After drinking, I'm a better lover. | _____ | _____ | _____ |
| 20. When I'm drinking, it is easier to open up and express my feelings. | _____ | _____ | _____ |
| 21. Drinking adds a certain warmth to social occasions for me. | _____ | _____ | _____ |
| 22. If I'm feeling restricted in any way, drinking makes me feel better. | _____ | _____ | _____ |
| 23. I can't think as quickly after I drink. | _____ | _____ | _____ |
| 24. Having drinks is a nice way for me to celebrate special occasions. | _____ | _____ | _____ |
| 25. Alcohol makes me worry less. | _____ | _____ | _____ |
| 26. Drinking makes me inefficient. | _____ | _____ | _____ |
| 27. Drinking is pleasurable because it's enjoyable for me to join in with other people who are enjoying themselves. | _____ | _____ | _____ |
| 28. After drinking, I am more sexually responsive. | _____ | _____ | _____ |
| 29. I feel more coordinated after I drink. | _____ | _____ | _____ |
| 30. I'm more likely to say embarrassing things after drinking. | _____ | _____ | _____ |
| 31. I enjoy having sex more if I've had alcohol. | _____ | _____ | _____ |
| 32. I'm more likely to get into an argument if I've had alcohol. | _____ | _____ | _____ |
| 33. Alcohol makes me less concerned about doing things well. | _____ | _____ | _____ |
| 34. Alcohol helps me sleep better. | _____ | _____ | _____ |
| 35. Drinking gives me more confidence in myself. | _____ | _____ | _____ |
| 36. Alcohol makes me more irresponsible. | _____ | _____ | _____ |
| 37. After drinking it is easier for me to pick a fight. | _____ | _____ | _____ |
| 38. Alcohol makes it easier for me to talk to people. | _____ | _____ | _____ |
| 39. If I have alcohol it is easier for me to express my feelings. | _____ | _____ | _____ |
| 40. Alcohol makes me more interesting. | _____ | _____ | _____ |

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SOCRATES

The Stages of Change Readiness and Treatment Eagerness Scale

SOCRATES is an experimental instrument designed to assess readiness for change in alcohol abusers. The instrument yields three factorially-derived scale scores: Recognition (Re), Ambivalence (Am), and Taking Steps (Ts). It is a public domain instrument and may be used without special permission.

Answers are to be recorded directly on the questionnaire form. Scoring is accomplished by transferring to the SOCRATES Scoring Form the numbers circled by the respondent for each item. The sum of each column yields the three scale scores. Data entry screens and scoring routines are available.

These instruments are provided for research uses only. Version 8 is a reduced 19-item scale based on factor analyses with prior versions. The shorter form was developed using the items that most strongly marked each factor. The 19-item scale scores are highly related to the longer (39 item) scale for Recognition ($r = .96$), Taking Steps (.94), and Ambivalence (.88). We therefore currently recommend using the 19-item Version 8 instrument.

Psychometric analyses revealed the following psychometric characteristics of the 19-item SOCRATES:

	Cronbach Alpha	Test-retest Reliability	
		Intraclass	Pearson
Ambivalence	.60 - .88	.82	.83
Recognition	.85 - .95	.88	.94
Taking Steps	.83 - .96	.91	.93

Various other forms of the SOCRATES have been developed. These will be migrated into shorter 8.0 versions as psychometric studies are completed. They are:

8D	19-item drug/alcohol questionnaire for clients
7A-SO-M	32-item alcohol questionnaire for significant others of males
7A-SO-F	32-item alcohol questionnaire for SOs of females
7D-SO-F	32-item drug/alcohol questionnaire for SOs of females
7D-SO-M	32-item drug/alcohol questionnaire for SOs of males

The parallel SO forms are designed to assess the motivation for change of significant others (not collateral estimates of clients' motivation). The SO forms lack a Maintenance scale, and therefore are 32 items in length.

Prochaska and DiClemente have developed a more general stages of change measure known as the University of Rhode Island Change Assessment (URICA). The SOCRATES differs from the URICA in that SOCRATES poses questions specifically about alcohol or other drug use, whereas URICA asks about the client's "problem" and change in a more general manner.

Source Citation:

Miller, W. R., & Tonigan, J. S. (1996). Assessing drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychology of Addictive Behaviors* 10, 81-89.□

Personal Drinking Questionnaire
(SOCRATES 8A)

INSTRUCTIONS: Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your drinking. For each statement, circle one number from 1 to 5, to indicate how much you agree or disagree with it right now. Please circle one and only one number for every statement.

	NO! Strongly Disagree	No Disagree	? Undecided or Unsure	Yes Agree	YES! Strongly Agree
1. I really want to make changes in my drinking.	1	2	3	4	5
2. Sometimes I wonder if I am an alcoholic.	1	2	3	4	5
3. If I don't change my drinking soon, my problems are going to get worse.	1	2	3	4	5
4. I have already started making some changes in my drinking.	1	2	3	4	5
5. I was drinking too much at one time, but I've managed to change my drinking.	1	2	3	4	5
6. Sometimes I wonder if my drinking is hurting other people.	1	2	3	4	5
7. I am a problem drinker.	1	2	3	4	5
8. I'm not just thinking about changing my drinking, I'm already doing something about it.	1	2	3	4	5
9. I have already changed my drinking, and I am looking for ways to keep from slipping back to my old pattern.	1	2	3	4	5
10. I have serious problems with drinking.	1	2	3	4	5

	NO! Strongly Disagree	No Disagree	? Undecided or Unsure	Yes Agree	YES! Strongly Agree
11. Sometimes I wonder if I am in control of my drinking.	1	2	3	4	5
12. My drinking is causing a lot of harm.	1	2	3	4	5
13. I am actively doing things now to cut down or stop drinking.	1	2	3	4	5
14. I want help to keep from going back to the drinking problems that I had before.	1	2	3	4	5
15. I know that I have a drinking problem.	1	2	3	4	5
16. There are times when I wonder if I drink too much.	1	2	3	4	5
17. I am an alcoholic.	1	2	3	4	5
18. I am working hard to change my drinking.	1	2	3	4	5
19. I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.	1	2	3	4	5

SOCRATES Scoring Form - 19-Item Versions 8.0

Transfer the client's answers from questionnaire (see note below):

	Recognition	Ambivalence	Taking Steps
	1 _____	2 _____	
	3 _____		4 _____
			5 _____
		6 _____	
	7 _____		8 _____
			9 _____
	10 _____	11 _____	
	12 _____		13 _____
			14 _____
	15 _____	16 _____	
	17 _____		18 _____
			19 _____
TOTALS	Re _____	Am _____	Ts _____
Possible Range:	7-35	4-20	8-40

SOCRATES Profile Sheet (19-Item Version 8A)

INSTRUCTIONS: From the SOCRATES Scoring Form (19-Item Version) transfer the total scale scores into the empty boxes at the bottom of the Profile Sheet. Then for each scale, **CIRCLE** the same value above it to determine the decile range.

DECILE SCORES	Recognition	Ambivalence	Taking Steps
90 Very High		19-20	39-40
80		18	37-38
70 High	35	17	36
60	34	16	34-35
50 Medium	32-33	15	33
40	31	14	31-32
30 Low	29-30	12-13	30
20	27-28	9-11	26-29
10 Very Low	7-26	4-8	8 - 25
RAW SCORES (from Scoring Sheet)	Re=	Am=	Ts=

These interpretive ranges are based on a sample of 1,726 adult men and women presenting for treatment of alcohol problems through Project MATCH. Note that individual scores are therefore being ranked as low, medium, or high *relative to people already presenting for alcohol treatment.*

Guidelines for Interpretation of SOCRATES-8 Scores

Using the SOCRATES Profile Sheet, circle the client's raw score within each of the three scale columns. This provides information as to whether the client's scores are low, average, or high *relative to people already seeking treatment for alcohol problems*. The following are provided as general guidelines for interpretation of scores, but it is wise in an individual case also to examine individual item responses for additional information.

RECOGNITION

HIGH scorers directly acknowledge that they are having problems related to their drinking, tending to express a desire for change and to perceive that harm will continue if they do not change.

LOW scorers deny that alcohol is causing them serious problems, reject diagnostic labels such as "problem drinker" and "alcoholic," and do not express a desire for change.

AMBIVALENCE

HIGH scorers say that they sometimes *wonder* if they are in control of their drinking, are drinking too much, are hurting other people, and/or are alcoholic. Thus a high score reflects ambivalence or uncertainty. A high score here reflects some openness to reflection, as might be particularly expected in the contemplation stage of change.

LOW scorers say that they *do not wonder* whether they drink too much, are in control, are hurting others, or are alcoholic. Note that a person may score low on ambivalence *either* because they "know" their drinking is causing problems (high Recognition), or because they "know" that they do not have drinking problems (low Recognition). Thus a low Ambivalence score should be interpreted in relation to the Recognition score.

TAKING STEPS

HIGH scorers report that they are already doing things to make a positive change in their drinking, and may have experienced some success in this regard. Change is underway, and they may want help to persist or to prevent backsliding. A high score on this scale has been found to be predictive of successful change.

LOW scorers report that they are not currently doing things to change their drinking, and have not made such changes recently.

ADAI DMC

Alcohol Abstinence Self-Efficacy Scale

Protocol Number: XXXXXXXX-XXXX

Participant #: _____	Name Code: _____	Visit #: _____	
Form Completion Status: _____		Visit Date: _____ / _____ / _____	
1=Form completed as required 2=Participant refused 3=Responsible person did not complete 4=Not enough time at the visit 5=Participant did not attend visit 6=Other (specify: _____)		m m d d y y y y	
Node #: _____	Site #: _____		

Listed below are a number of situations that lead some people to drink. We would like to know **how TEMPTED you may be to drink in each situation**. Check the answer that best describes the feelings of temptation in each situation at the present time.

SITUATION	TEMPTED					
	Not at all	Not very	Moderately	Very	Extremely	
1. When I am in agony because of stopping or withdrawing from alcohol use	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	1
2. When I have the shakes	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	2
3. When I am feeling depressed	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	3
4. When I am lonely and want to talk	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	4
5. When I am concerned about someone	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	5
6. When I am very worried	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	6
7. When I have the urge to try just one drink to see what happens	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	7
8. When I am being offered a drink and I want it	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	8
9. When I dream about taking a drink	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	9
10. When I want to test my willpower over drinking	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	10
11. When I am feeling a physical need or craving for alcohol	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	11
12. When I am physically ill	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	12
13. When I am experiencing some physical pain or injury	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	13
14. When I feel like blowing up because of frustration	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	14

Participant #: _____

Visit Date: _____ / _____ / _____
m m d d y y y y

SITUATION	TEMPTED					
	Not at all	Not very	Moderately	Very	Extremely	
15. When I see others drinking at a bar or at a party	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	15
16. When I sense everything is going wrong for me	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	16
17. When people I used to drink with encourage me to drink	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	17
18. When I am in line anywhere inside	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	18
19. When I experience an urge or impulse to take a drink that catches me unprepared	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	19
20. When I am excited or to be fun with others	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	20

Listed below are a number of situations that lead some people to drink. We would like to know **how CONFIDENT** are you that **you WOULD NOT drink in each situation**. Check the answer that best describes the feelings of confidence in each situation at the present time.

SITUATION	CONFIDENCE					
	Not at all	Not very	Moderately	Very	Extremely	
21. When I am in agony because of stopping or withdrawing from alcohol use	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	21
22. When I have a headache	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	22
23. When I am feeling depressed	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	23
24. When I am on vacation and want to relax	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	24
25. When I am concerned about someone	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	25
26. When I am very worried	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	26
27. When I have the urge to try just one drink to see what happens	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	27
28. When I am being asked if I drink in a social situation	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	28
29. When I dream about taking a drink	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	29
30. When I want to test my willpower over drinking	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	30
31. When I am feeling a physical need or craving for alcohol	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	31

Participant #: _____

Visit Date: _____ / _____ / _____
m m d d y y y y

SITUATION	CONFIDENCE					
	Not at all	Not very	Moderately	Very	Extremely	
32. When I am physically tired	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	32
33. When I am experiencing some physical pain or injury	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	33
34. When I feel like blowing up because of frustration	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	34
35. When I see others drinking at a bar or at a party	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	35
36. When I sense everything is going wrong for me	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	36
37. When people I used to drink with encourage me to drink	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	37
38. When I am feeling empty inside	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	38
39. When I experience an urge or impulse to take a drink that catches me unprepared	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	39
40. When I am excited or celebrating with others	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	40

Completed by (Staff #): _____

Reviewed by (Staff #): _____

Entered by (Staff #): _____

ALCOHOL ABSTINENCE SELF-EFFICACY (AASE)

NEGATIVE AFFECT

- 18 or 38. When I am feeling angry inside
- 16 or 36. When I sense everything is going wrong for me
- 3 or 23. When I am feeling depressed
- 14 or 34. When I feel like blowing up because of frustration
- 6 or 26. When I am very worried

SOCIAL/POSITIVE

- 15 or 35. When I see others drinking at a bar or at a party
- 20 or 40. When I am excited or celebrating with others
- 4 or 24. When I am on vacation and want to relax
- 17 or 37. When people I used to drink with encourage me to drink
- 8 or 28. When I am being offered a drink in a social situation

PHYSICAL AND OTHER CONCERNS

- 2 or 22. When I have a headache
- 12 or 32. When I am physically tired
- 5 or 25. When I am concerned about someone
- 13 or 33. When I am experiencing some physical pain or injury
- 9 or 29. When I dream about taking a drink

CRAVING AND URGES

- 1 or 21. When I am in agony because of stopping or withdrawing from alcohol use
- 7 or 27. When I have the urge to try just one drink to see what happens
- 11 or 31. When I am feeling a physical need or craving for alcohol
- 10 or 30. When I want to test my willpower over drinking
- 19 or 39. When I experience an urge or impulse to take a drink that catches me unprepared

APPENDIX 4

Version 2

SESSION EVALUATION QUESTIONNAIRE

Please circle the number on each line to show how you feel about the session you just had.

This session was:

Bad	1	2	3	4	5	6	7	Good
Safe	1	2	3	4	5	6	7	Dangerous
Difficult	1	2	3	4	5	6	7	Easy
Valuable	1	2	3	4	5	6	7	Worthless
Shallow	1	2	3	4	5	6	7	Deep
Relaxed	1	2	3	4	5	6	7	Tense
Unpleasant	1	2	3	4	5	6	7	Pleasant
Full	1	2	3	4	5	6	7	Empty
Weak	1	2	3	4	5	6	7	Powerful
Special	1	2	3	4	5	6	7	Ordinary
Rough	1	2	3	4	5	6	7	Smooth
Comfortable	1	2	3	4	5	6	7	uncomfortable

How logical does this approach seem to you?

Not at all 1 2 3 4 5 6 7 very logical

How useful do you think this approach is?

Not at all 1 2 3 4 5 6 7 very useful

How confident are you that this approach will be successful?

Not at all 1 2 3 4 5 6 7 very confident

How confident would you be in recommending this approach to a friend with similar problems?

Not at all 1 2 3 4 5 6 7 very confident

Please write down any comments you have to make about the session in the space provided

.....

.....

.....

APPENDIX 5

CONFIDENT?

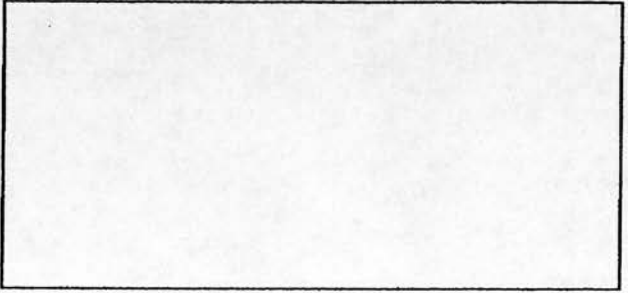
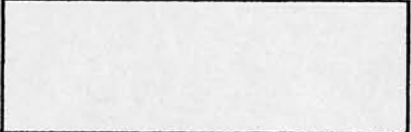
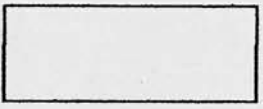
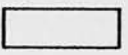
NOT AT ALL

NOT VERY

MODERATELY

VERY

EXTREMELY



TEMPTED ?

NOT AT
ALL

NOT
VERY

MODERATELY

VERY

EXTREMELY



NO!

STRONGLY
DISAGREE



No

DISAGREE

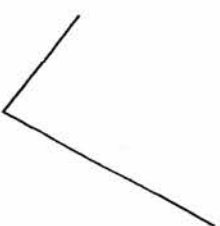
?

NOT
SURE



Yes

AGREE



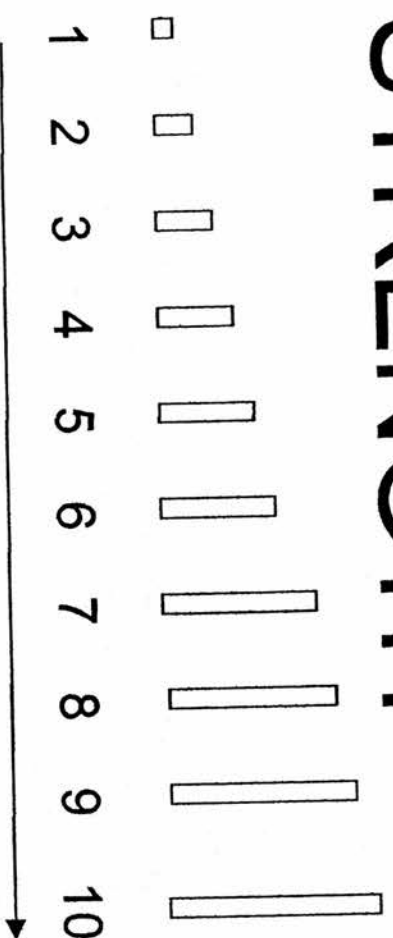
YES!

STRONGLY
AGREE

AGREE DISAGREE



STRENGTH



APPENDIX 6

SESSION TIMETABLE

- Session 1- *Getting started*
- Session 2- *Relaxation and anxiety management*
- Session 3- *High risk situations*
- Session 4- *Thought processes*
- Session 5- *Life style imbalance*
- Session 6- *Assertion and drink refusal*
- Session 7- *Problem solving*

ALCOHOL RELAPSE PREVENTION

SESSION 1

- Introductions



- Introduction to relapse model



- The positive (+) and negative (-) effects of drinking



- The decision balance sheet
- Relaxation exercise
- Homework
- Feed back questionnaire

Decision balance sheet



If I decide to.....

The <i>Positive</i> (+) consequences	The <i>Negative</i> (-) consequences
SHORT TERM	SHORT TERM
LONG TERM	LONG TERM

Decision balance sheet



If I decide to.....drink alcohol.....

The <i>Positive</i> (+) consequences	The <i>Negative</i> (-) consequences
SHORT TERM relaxing sociable increases confidence occupies time lowers anxiety nice taste nice feeling creates an atmosphere	SHORT TERM poor memory poor concentration Black outs Hangovers shakes fearful regrets guilt anxiety
LONG TERM memory loss helps forget unwanted thoughts Blocks out helps sleep being part of a group release delays making a decision	LONG TERM impairs judgement lowers career prospects Burden negative role model depression increases anxiety trouble with police addiction drink driving increases accidents Suicide

disappointment

memory loss
loss of friends

violence
appearance
Change

Decision balance sheet



If I decide to.....exercise.....

The <i>Positive</i> (+) consequences	The <i>Negative</i> (-) consequences
SHORT TERM sociable fresh air feel good fitness helps sleeping Tires you out occupies time relaxes /unwinds meet people LONG TERM regular exercise reduces stress Healthy Interest / hobby Travel self discipline Responsibility positive attitude	SHORT TERM Tiredness overdoing it obligation to drink afterward loss of self esteem LONG TERM Injury Too much commitment Fanatical /addictive Expense Heart attacks for joggers

SESSION 3

HIGH RISK SITUATIONS

Aims:

- to define what high risk situations are
- to identify your current hierarchy of high risk situations
- To review past and current coping strategies
- To anticipate future high risk situations

Objectives:

- 1) Brainstorm- 'what are your high risk situations?'- flash cards exercise
- 2) Rank your high risk situations from most to least risky
- 3) Define 'high risk situation'
- 4) The three categories of high risk situation- **THE BIG THREE** (downers, rows, pressure)
- 5) What are the ways you cope now?
- 6) What are new ways of coping
- 7) Real life example

Definition: High risk situation

‘Any situation which poses a threat to your sense of control and increases your chance of relapse’

HIGH RISK SITUATIONS

THE BIG THREE

1) DOWNERS

Eg. I drink when i'm upset



2) ROWS

eg. I got into an argument, so i had a drink



3) SOCIAL PRESSURE

eg. Everybody else at the party was drinking



COPING WITH ***THE BIG THREE***

DOWNERS



ROWS **SOCIAL PRESSURE**



COPING WITH ***THE BIG THREE***

DOWNERS



1. Find the reason
2. Positive thinking
3. see other people
4. Treat yourself

ROWS SOCIAL PRESSURE



1. get out of situation
2. change tactics
3. be assertive



1. avoid friends
2. Plan ahead
3. Find excuses
4. get help from friends
5. practise coping

SESSION 4

THOUGHT PROCESSES

AIMS:

- 1) TO RAISE YOUR AWARENESS OF THINKING PROBLEMS**
- 2) TO FIND WAYS OF BEING MORE OBJECTIVE**

OBJECTIVES

- 1) What is distorted thinking?**
- 2) Automatic thoughts**
- 3) How to record automatic thoughts- brainstorm**
- 4) The Thought Diary- example**
- 5) Role play real situation**
- 6) Learn to use coping strategies (Mental Tricks)**
- 7) Role play real situation**
- 8) What are Seemingly Irrelevant Decisions?**
- 9) Story exercise**
- 10) What is the Rule Violation effect?**

We are all prone at times to unhelpful 'distorted thinking', but when we are either under excess stress or are depressed, these distortions become more exaggerated. Research has shown that there are particular types of distorted thinking.

All-or-nothing thinking

You think in absolutes, as either black or white, good or bad, with no middle ground. You tend to judge people or events using general labels, for example 'he's an idiot', 'I'm hopeless. I'll never learn to drive. I'm a complete failure.' You may condemn yourself completely as a person on the basis of a single event.

Awfulising – catastrophising

You tend to magnify and exaggerate the importance of events and how awful or unpleasant they will be, over-estimating the chances of disaster; whatever can go wrong will go wrong. If you have a setback you will view it as a never-ending pattern of defeat.

Personalising

You take responsibility and blame for anything unpleasant even if it has little or nothing to do with you. If something bad happens you immediately think 'it's my fault'.

Negative focus

You focus on the negative, ignoring or misinterpreting positive aspects of a situation. You focus on your weaknesses and forget your strengths, looking on the dark side. If you've done a good job, you filter out and reject the positive comments and focus on the negative.

Jumping to conclusions

You make negative interpretations even though there are no definite facts. You start predicting the future, and take on the mantle of 'mind reader'. You are likely to predict that negative things will happen.

Living by fixed rules

You tend to have fixed rules and unrealistic expectations, regularly using the words 'should', 'ought', 'must' and 'can't'. This leads to unnecessary guilt and disappointment. The more rigid these statements are, the more disappointed, angry, depressed or guilty you are likely to feel.

Identify and name the common thinking distortions in each of the following statements. Underline the key words which point to a thinking distortion.

Jim is kept waiting 10 minutes for his appointment. As he sits waiting, he feels increasingly angry and tense. He thinks, 'These people should be on time. They just don't care about people like me. The trouble is they think they're better than me. I'll be stuck here all day.'

Carol burns the apple pie while cooking a large four-course meal for Roger, her husband, and his business colleagues. She thinks, 'Oh no, the whole meal is ruined. I'm a hopeless cook and a complete failure as a wife. I should be a better wife to Roger.'

Jane sees her friend Barbara walking along the other side of the road. Jane thinks, 'Barbara doesn't like me any more, she's ignoring me. I must have done something to upset her. I've never really had many friends – I guess I'm just not very likeable.'

Tony is about to give a lecture and notices that he feels nervous. He thinks, 'Oh no – my mind will go blank – I'll dry up and won't be able to say anything. I'll make a complete fool of myself. This is going to be terrible.'

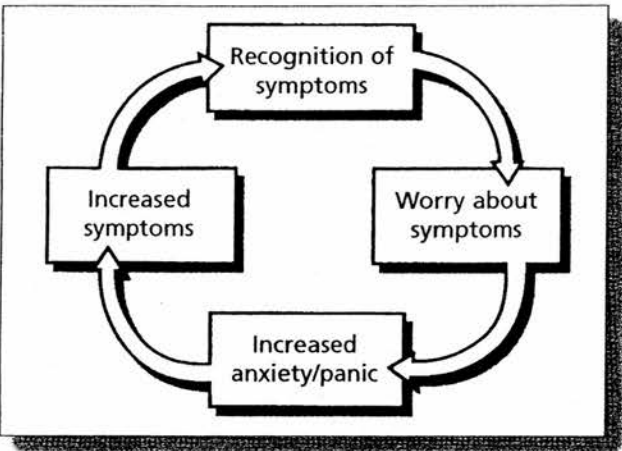
Mary loses her temper and shouts at her six-year-old son, who has been playing after being told to tidy his bedroom. Mary thinks, 'Jonathan is really terrible – he's completely out of control – he won't do a thing I tell him to. He will end up a complete waster. I shouldn't lose my temper like that. I am a hopeless mother.'

Diary Sheet

Please make an entry whenever you notice a definite drop in mood.

DATE/ TIME	DESCRIPTION OF SITUATION	MOOD LEVEL: 0-10	WHAT I WAS THINKING	ERRORS	CHALLENGES

Thinking about unpleasant symptoms will tend to make them worse. We begin the 'fear of fear' cycle, provoking further symptoms as well as preventing existing ones from disappearing.



It is difficult simply to turn your attention away from unpleasant feelings. To do so, two things are necessary.

- ◆ Be determined not to think about or dwell on the symptoms.
- ◆ Fill your mind with other things; distract yourself.

■ Distraction techniques

- ❶ **Mental games:** Doing puzzles, crosswords or other word games, reciting a poem, singing a song or counting backwards from one hundred, are all useful distraction exercises. The important thing is that they take your attention away from the panic thoughts.
- ❷ **Environmental focus:** Concentrating on a specific detail of the world around you, for example, making words out of the number plates of cars or guessing what people do for a living. Focusing on the outside world will prevent you thinking about what is going on inside.
- ❸ **Using a bridging object:** This might be a photograph or a special brooch or a souvenir from a happy time. Looking at the object generates positive anxiety-reducing thoughts.

❹ **Physical activity:** Giving yourself a task to do takes your mind off worrying thoughts, for example, handing drinks out at a party, changing the music, or washing up after a meal. On a more general level, keeping yourself physically active and mentally distracted from worrying thoughts by pursuing sporting activities is one of the best insulators against stress.

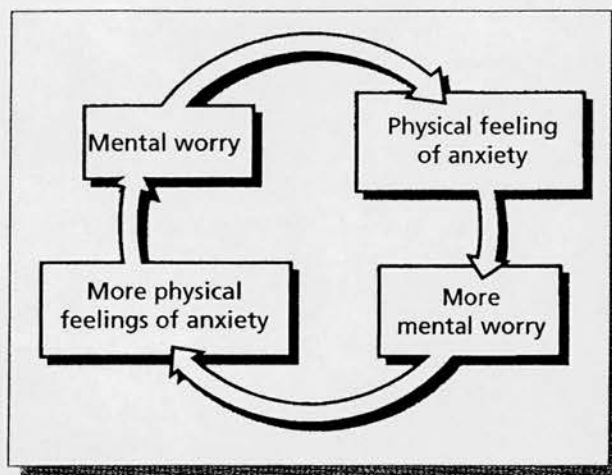
❺ **Meditation:** Techniques derived from eastern mediation systems can also be very useful. Sometimes a *mantra* or a special word can be used. The mediator focuses the mind upon the mantra in an effortless, relaxed way and with practice can block out other thoughts and ideas and achieve a level of relaxation.

❻ **Reading or talking:** Carry a book with you to read or talk to somebody who is with you. Ask somebody to talk to you.

Use distraction to help you get through situations, but try not to allow yourself to fall into the habit of becoming completely dependent on these techniques. After you have successfully coped with the anxiety using these techniques try to gradually do without them.

■ What is positive self-talk?

Worrying thoughts can make us feel physically anxious (heart racing, muscle tension etc), which then leads to us worrying more. ('Here we go again, I'm going to panic'.) A vicious circle soon gets established, running faster and faster under its own momentum.



Sometimes we are aware of these thoughts but often we are not. They may take the form of fleeting images or half-formed pictures in our minds. The thoughts tend to flash by automatically and very quickly.

An example may help to make this clearer. Imagine you are running upstairs when you feel a sudden sharp pain in the chest. It gives you a fright, and the thought goes through your head, 'Maybe there's something wrong with my heart'. The thought itself makes you more afraid, your heart beats faster, and the pain seems to take a long time to die away. Later on that day the same thought comes back to you. Once again your heartbeat increases and you feel afraid. The symptoms produced the thought, which made you anxious and added to the symptoms.

Positive self-talk is a copying strategy which involves breaking this vicious circle where negative thoughts lead to increased symptoms. It involves a number of stages.

■ How to practise positive self-talk

- ① **Find out exactly what you are thinking:** This is not always easy, as thoughts tend to flash through our minds so quickly and automatically that we are not always aware of them. Try writing these thoughts down on a diary sheet. Although it sounds strange, 'think about what you are thinking', or deliberately become 'mindful'.
- ② **Challenge the thoughts for how rational they are:** Research suggests that when people are under stress their thinking can often get distorted. Question your thoughts. Are you exaggerating? Are you thinking in all-or-nothing terms? Are you ignoring the positive?
- ③ **Replace negative thoughts with positive ones:** After you have challenged your existing thoughts, rewrite them in a more positive realistic language. Straighten out those distorted thoughts. It is sometimes useful to carry these positive challenges around with you on an index card.

What is the evidence?

What evidence do I have to support my thoughts?

What evidence do I have against them?

What alternative views are there?

How would someone else view this situation?

How would I have viewed this situation in the past?

What is the effect of thinking the way I do?

Does it help me, or hinder me from getting what I want? How?

What thinking error am I making?

- a Am I thinking in all-or-nothing terms
ignoring the middle ground?
- b Am I awfulising or catastrophising
overestimating the chances of disaster?
- c Am I personalising
blaming myself for something which is not my fault?
- d Am I focusing on the negative
looking on the dark side; ignoring my strengths?
- e Am I jumping to conclusions
predicting the future and mind-reading?
- f Am I living by fixed rules
fretting about how things ought to be; overusing the words should, must and can't?

What action can I take?

What can I do to change my situation? Am I overlooking solutions to problems on the assumption they won't work?

What is the worst possible outcome?

What is the worst thing that can happen and how bad would that really be?



SESSION 5

LIFESTYLE IMBALANCE

- 1) What is stress?
- 2) Brainstorm and card exercise- words/phrases/situations
- 3) Two main types of stress- **LIFE EVENTS & HASSLES**
- 4) Divide stressors into the two main stress types
- 5) What are 'Shoulds' & 'Wants'
- 6) The imbalance of 'should' & 'want'
- 7) What do I need for a fulfilling life?
- 8) Unfulfilled areas of need & how to meet them
- 9) Types of Global Coping Strategies & their Benefit

THE TWO TYPES OF STRESS

1) **MAJOR LIFE EVENTS**- eg. losing a job

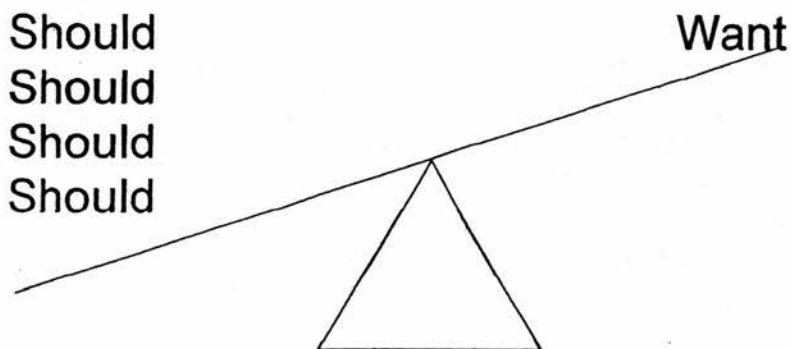
2) **HASSLES**- ie. the minor occurrences of daily life

LIFE EVENTS	HASSLES

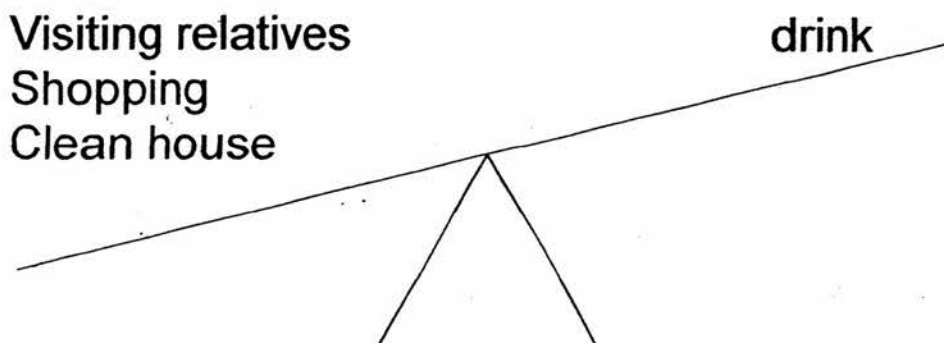
'SHOULD'S' AND 'WANTS'

SHOULD'S- THINGS WE FEEL WE HAVE TO DO
eg. cleaning

WANTS- ACTIVITIES CARRIED OUT FOR
ENJOYMENT eg. watching t.v.



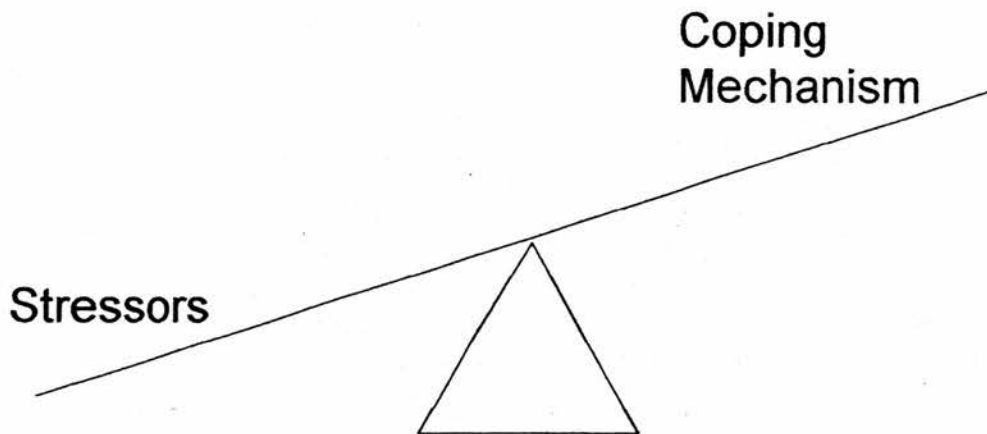
Too many **SHOULD'S** leads to indulgence & relapse



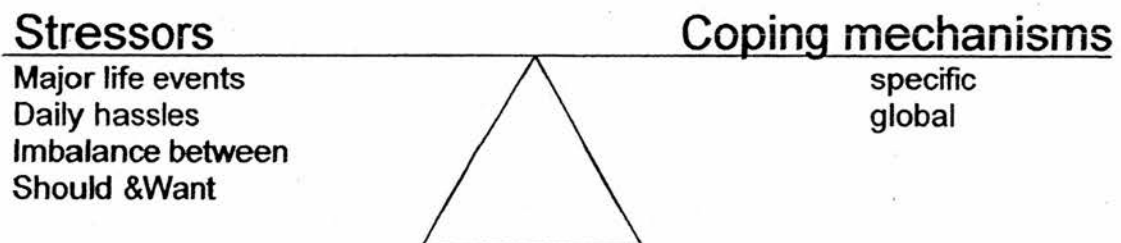
A FULFILLING AND SATISFYING LIFE!

- Stress makes relapse more likely
- Relapse can be prevented by reducing stress and improving our ability to cope with stress

STRESS!



You need a **balance**



What are your ways of coping?

**eg. exercise, relaxation time, having a bath,
going for a walk, belonging to a group (AA)**

- ***
- ***
- ***
- ***
- ***
- ***

What's good about them?

- ***
- ***
- ***
- ***
- ***
- ***

SESSION 6

ASSERTION AND DRINK REFUSAL

- 1) WHAT IS ASSERTION?
- 2) THE FOUR BEHAVIOUR TYPES AND EXERCISE
- 3) PAST SITUATIONS WHEN YOU'VE BEEN ASSERTIVE
- 4) BODY LANGUAGE- **VEGES**
- 5) ROLE PLAY EXERCISE
- 6) NEEDING TO REFUSE DRINKS
- 7) COMMUNICATING EFFECTIVELY-
CLINK
- 8) IDENTIFYING DRINK REFUSAL SITUATIONS
- 9) ROLE PLAY
- 10) HOW OTHER PEOPLE OFFER AND REFUSE DRINKS
- 11) SAYING 'NO'

ASSERTIVENESS

What do we mean by 'assertion'?

There are many definitions of assertiveness. Here are the one which are considered to be the most important:



- **The ability to express our ideas and feelings, both positive and negative, in an open, direct and honest manner;**
- **The ability to stand up for our rights while respecting the rights of others;**
- **The ability to take responsibility for ourselves and our actions without judging or blaming other people;**
- **The ability to find a compromise where conflict exists**

Behaviour Types

There are basically four different types of behaviour: passivity, direct aggression, indirect aggression and assertion. Nobody is completely aggressive, passive or assertive all the time. Each one of us has learnt to behave aggressively, indirectly, passively and assertively in different situations throughout our lives.

Passivity

This is the 'doormat' syndrome, where we allow ourselves to be trampled on by other people. It is characterised by a feeling of powerlessness and an inability to take control of our lives. Passive behaviour is usually associated with the 'loser': one who is always backing down, giving in and being submissive. Apologies are rife in this mode of communication, as are reluctant agreements and negative statements about the self.

The following beliefs underpin passive behaviour:



- I'm really sorry
- I'm not important
- Whatever you want's ok for me
- I mustn't rock the boat

Situation: Taking an unsatisfactory letter back to the person who has produced it.

Passive response: You find an excuse not to take the letter back or you say 'I know it's, um . . . probably my fault in . . . not writing very clearly, but is there, um. . . any chance at all you could find a spare minute to um . . . just change one or two small things for me.'

Aggression

Aggressive behaviour takes no account of the rights of others and stems from a desire to win at all costs. It is often confused with assertion. It is true that, when we behave aggressively, we stand up for our rights, express our views and state our needs, but the one important difference is that we do this without any thought or consideration for others' feelings.

The following beliefs underpin aggressive behaviour:



- I don't care what you think
- I always win
- Get out of my way
- How dare you

Situation: *Taking an unsatisfactory letter back to the person who has produced it.*

Aggressive response: 'I don't know how you've got the nerve to give me this sort of stuff for signing. It's full of mistakes'.

Indirect Aggression (Passive/Aggressive)

This behaviour often results from the fear that exists of being openly aggressive. Indirect aggression is often seen as the softer option, but in fact can be just as devastating, involving the manipulation of others through guilt and emotional blackmail. The distinguishing features of this mode of communication are sarcastic comments, comments with double meanings and non-verbal signals such as mockingly gazing heavenwards. Never risking a direct expression of our thoughts and feelings, we create instead an undercurrent of guilty unease, the aim of which is to manipulate others into doing what we want.

The following beliefs underpin passive aggressive behaviour:



- **Don't worry I can manage**
- **Can't you take a joke**
- **That's pretty good for someone like you**
- **Martyrdom's my way of life**

Situation: *Taking an unsatisfactory letter back to the person who has produced it.*

Passive aggressive response: 'One of these days you will surprise me and actually produce work with no mistakes . . . What are you looking at me like that for? I was only joking.'

Assertion

Assertive communication does not diminish or 'put down' another human being, it does not trespass on any human rights and it does not shy away from important issues. It means taking responsibility for our thoughts, feelings and actions, instead of blaming or judging others. Standing up for our rights and expressing our needs is done with consideration for the other person's rights and needs, resulting in equal communication. This approach shuns the win/lose idea, and works instead towards a situation of mutual compromise, where both parties feel acknowledged.

Assertion means feeling on an equal level with others, whoever they may be, and being honest about our feelings, expressing them openly and clearly. Assertive behaviour involves taking the initiative, rather than waiting for something to happen. This results in a feeling of inner strength and enables us to take control of our lives.

The following beliefs underpin assertive behaviour:



- I have the right to be me, you have the right to be you
 - I'm ok, you're ok
 - My life is my responsibility
 - I feel...

Situation: Taking an unsatisfactory letter back to the person who has produced it.

Assertive response: 'I would like you to re-do this letter as there are several mistakes in it.'

IDENTIFICATION OF DIFFERENT BEHAVIOURS

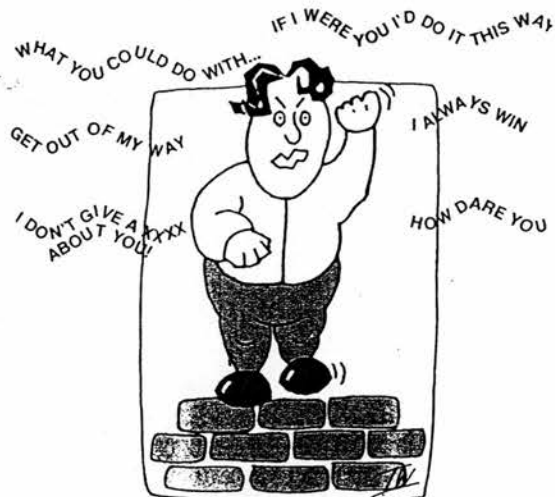
	Situation	Response	Behaviour
1.	A meeting is being planned to arrange a Christmas party. The time suggested is not convenient for you.	"I'd like to come to the meeting, but unfortunately I won't be able to. Please would you give my apologies and ensure that I am sent the minutes."	
2.	You arrange to meet a friend for a meal. He is half an hour late, but full of apologies.	"Oh good, you're here at last. I'm absolutely starving; I didn't get time for lunch today, but it doesn't matter."	
3.	The television repairer promises to return the following day with your TV. When he doesn't, you ring to complain.	"I'm fed up with your awful service – I won't buy anything from you ever again!"	
4.	Your parents telephone you to invite you to a party they are giving for their friends. You are uncomfortable with most of the people invited and do not want to go.	In a sarcastic tone: "It sounds like a whole lot of fun – just what I need after a hard week in the office. I suppose you'd be upset if I didn't come."	
5.	Your friend telephones you and chats for a long time. You would like to finish the conversation.	"I'm ever so sorry, but I'm going to have to go: the cat's just been sick and the children are shouting for their tea. I'm really sorry. I hope you don't mind."	
6.	You are feeling put upon at work and decide to ask for a rise.	"I'd like to talk about my pay with you. Please could we meet next week to discuss it further?"	
7.	You live in a shared house. The person whose room is next to yours plays loud music well into the night.	You bang on the wall shouting "Will you stop that dreadful row, I'm sick to death of it!"	
8.	You go to buy a pair of shoes. The salesman is very pushy and says, "I think these are perfect for you" but you are not convinced.	"Well, I'm not really sure, but if you think they look nice, I'll have them."	

IDENTIFICATION OF DIFFERENT BEHAVIOURS

	Situation	Response	Behaviour
1.	A meeting is being planned to arrange a Christmas party. The time suggested is not convenient for you.	"I'd like to come to the meeting, but unfortunately I won't be able to. Please would you give my apologies and ensure that I am sent the minutes."	Assertive
2.	You arrange to meet a friend for a meal. He is half an hour late, but full of apologies.	"Oh good, you're here at last. I'm absolutely starving; I didn't get time for lunch today, but it doesn't matter."	indirect aggression
3.	The television repairer promises to return the following day with your TV. When he doesn't, you ring to complain.	"I'm fed up with your awful service - I won't buy anything from you ever again!"	aggressive
4.	Your parents telephone you to invite you to a party they are giving for their friends. You are uncomfortable with most of the people invited and do not want to go.	In a sarcastic tone: "It sounds like a whole lot of fun - just what I need after a hard week in the office. I suppose you'd be upset if I didn't come."	indirect aggression
5.	Your friend telephones you and chats for a long time. You would like to finish the conversation.	"I'm ever so sorry, but I'm going to have to go: the cat's just been sick and the children are shouting for their tea. I'm really sorry. I hope you don't mind."	Passive
6.	You are feeling put upon at work and decide to ask for a rise.	"I'd like to talk about my pay with you. Please could we meet next week to discuss it further?"	Assertive
7.	You live in a shared house. The person whose room is next to yours plays loud music well into the night.	You bang on the wall shouting "Will you stop that dreadful row, I'm sick to death of it!"	aggressive
8.	You go to buy a pair of shoes. The salesman is very pushy and says, "I think these are perfect for you" but you are not convinced.	"Well, I'm not really sure, but if you think they look nice, I'll have them."	Passive

HANDOUT C Behaviour Types

DIRECT AGGRESSION



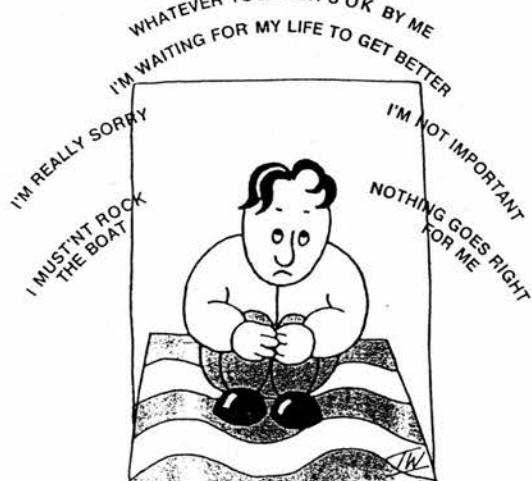
**BOSSY
ARROGANT
BULLDOZING
INTOLERANT
OPINIONATED
OVER-BEARING**

INDIRECT AGGRESSION



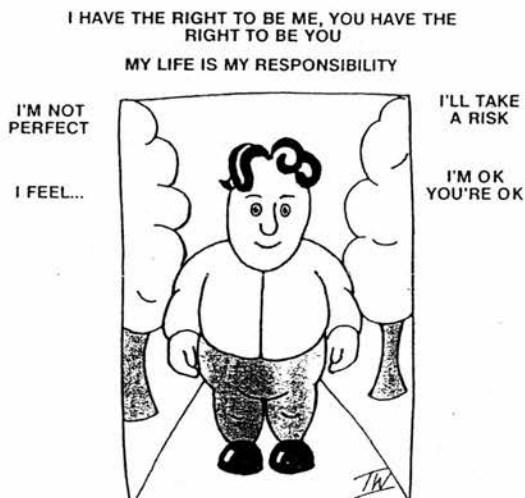
**SARCASTIC
DECEIVING
AMBIGUOUS
INSINUATING
MANIPULATIVE
GUILT INDUCING**

PASSIVITY



**WAITING
MOANING
HELPLESS
SUBMISSIVE
INDECISIVE
APOLOGETIC**

ASSERTIVENESS



**DIRECT
HONEST
POSITIVE
ACCEPTING
RESPONSIBLE
SPONTANEOUS**

SITUATIONS YOU HAVE BEEN ASSERTIVE IN

SITUATIONS	HOW DID YOU FEEL?	HOW DID YOU BEHAVE?	WHAT DID YOU THINK?

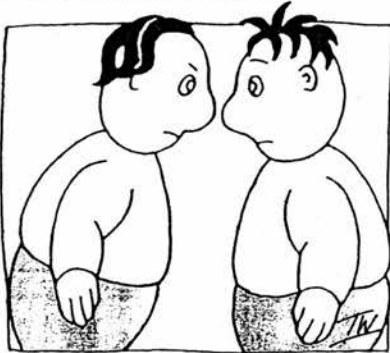
Assertive Body Language



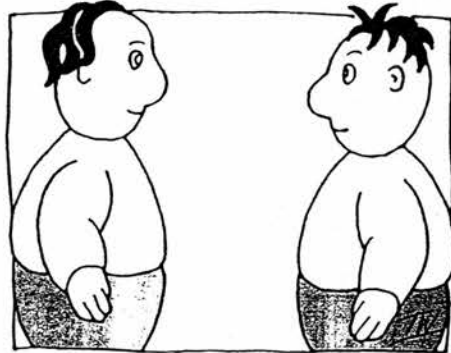
- Feeling strong and balanced, with **feet firmly planted**, helps to give us a sense of equality and conveys confidence in what we are doing.
- Keeping direct comfortable **eye contact** is an open and honest form of communication. Our eyes cannot lie as easily as our mouths.
- We need to respect each other's **body space** and not invade it. Standing too close can be very intimidating, just as standing too far away can give an impression of detachment and lack of interest.
- Perhaps the most important aspect of body language is the way we use our **voice**. Our intonation can make all the difference; saying something with a sarcastic edge to our voice will reveal our underlying aggression, even if the words are assertive. The **speed** of our speech often reveals our anxiety; slowing it down helps us sound calm and assertive.
- The **volume** of our speech is also important. We need to ensure that our voices are loud enough – even an assertive response will have no effect if it cannot be heard. In the same way, it can be useful to check if we are speaking too loudly, as this often gives an aggressive message when none was intended.

Our body language is always affected by the way we feel. Even if we try hard to deny and repress our feelings, they will leak out somewhere,

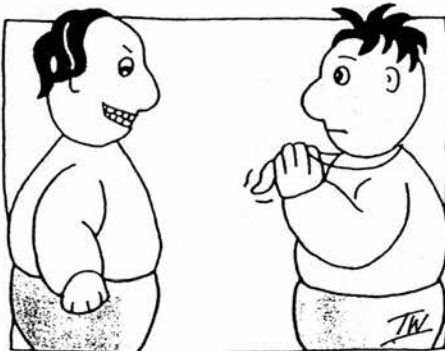
Body Language



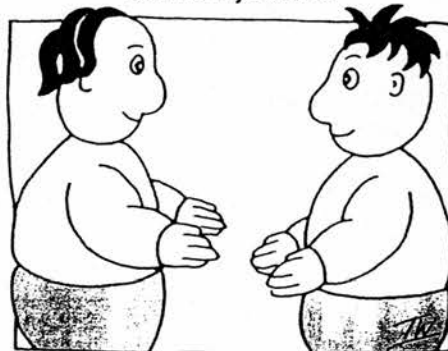
BODY SPACE
Respect other's space.
Too close? Too far?



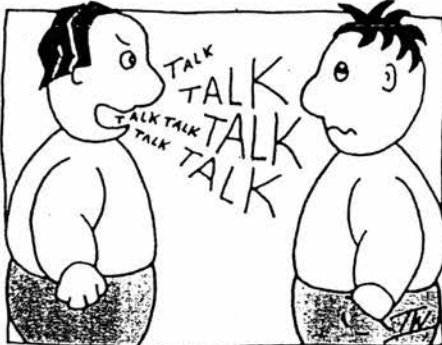
ASSERTIVE STANCE
Stand tall.
Hold your head high.
Feel strong and equal.
Believe in yourself.



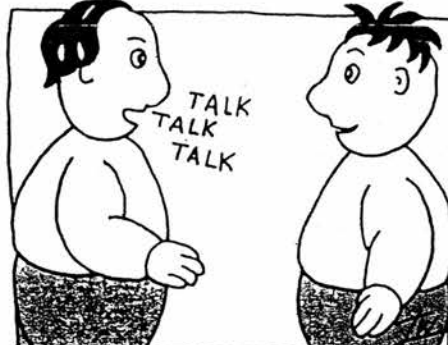
FACIAL EXPRESSION
Is your face saying what you are saying?
GESTURES
Avoid fidgeting.
Use appropriate gestures.



EYE CONTACT
Look at the person – not at the ground.
Avoid a fixed stare.
Use a comfortable, direct gaze.



INTONATION
Be interesting not monotonous.
Avoid sarcasm.



VOLUME
Adjust your volume control.
Check your speed.

ASSERTIVE BODY LANGUAGE

All the different parts of assertive body language can be easily remembered using the word 'VEGES'

Voice. Keep your intonation interesting, talk at a reasonable volume and don't speak too fast.

Eye contact. Remember to look at the person, using a comfortable direct gaze. However, don't have a fixed stare- people find this threatening.

Gestures. Avoid fiddling with objects, like bits of your clothes. Use appropriate gestures.

Expression. Make sure your facial expression is saying what you are saying. Don't look angry or anxious.

Space and stance. Don't invade others body space but also don't stand too far away. Stand up straight, tall and feel equal.

When we describe situations in which we have failed to be assertive it can leave us with negative feelings, such as anger and frustration. These feelings are HIGH RISK SITUATIONS and can lead to relapse.

IN WHAT SITUATIONS WOULD YOU NEED TO REFUSE A DRINK?

HIGH RISK SITUATIONS:

*

*

*

*

EFFECTIVE COMMUNICATION

HOW TO GET YOUR MESSAGE ACROSS: CLINK

CALM AND CONCISE: Choose the right time and place. Mentally rehearse what you would like to say. Be clear and calm and don't waffle.

LISTEN: Listen to what the person has to say without interrupting, judging or name-calling.

I STATEMENTS: Beginning with 'I' shows that you accept full responsibility. Say 'I feel ...' or 'I think ...' Apply the three part assertive message. Describe the **behaviour**, your **feelings** and the **effects** e.g. 'When you leave your clothes on the floor, I feel annoyed because it makes extra work. I would like it if ...'

NEGOTIATE: State your case; feelings first followed by what you would like, then listen to the other person. Discuss differences and reach an agreement that suits both parties.

KEEP IT UP: Practice utilising these skills. By being more assertive we can improve our sense of identity, our confidence and our self-esteem. A snowball effect is created: the more confident we feel, the more assertive we are and so on.

STARTING TO BECOME MORE ASSERTIVE

Many people report that they find it difficult to act assertively in the following situations:

1. Making and refusing requests
2. Giving and receiving criticism
3. Disagreeing and stating your views

SAYING 'NO'

Some people find it very difficult to say no. This often means that they spend a great deal of their time doing things for other people that they really do not want to do. This can often lead to a gradual build up of resentment and frustration, which can poison relationships. It also means that they have little control over their time and their life in general. Saying 'no' to the demands of others puts you in the drivers seat and means that you have more control over your life and time.

BELIEFS ABOUT SAYING NO

There appear to be a number of key beliefs, which would predispose people to have difficulty saying 'no'. These beliefs need to be challenged and modified:

- If I say 'no' to somebody they will cease to like me
- Saying 'no' is rude and aggressive
- Saying 'no' is unkind, uncaring and selfish
- Saying 'no' will hurt and upset others and make them feel rejected
- Other's needs are more important than mine.
- Saying 'no' over little things is small minded and petty

The key to refusing requests and saying 'no' is to be able to accept the following beliefs:

- 'Other people have the right to ask and I have the right to refuse'
- 'When you say 'no' you are refusing a request, not rejecting a person'

WAYS OF SAYING 'NO'

Direct 'no'- The aim is to say no without apologising. The other person has the problem but you do not have to allow them to pass it on to you. A direct no can be quite forceful and can be effective with salespeople.

Reflecting 'no'- This technique involves reflecting back the content and feeling of the request, but adding your assertive refusal at the end. For example 'I know you're looking forward to going out for lunch today, but I can't come'

Reasoned 'no'- this gives, very briefly, the genuine reason for the refusal. For example, 'I can't go out for lunch today because I am babysitting for my sister'

Raincheck 'no'- This says 'no' to the present request but leaves room for negotiation. For example; 'I can't go this afternoon, but I'd like to go this evening'.

Enquiring 'no'- This is not a definite 'no' and again could be a prelude to negotiation. For example 'Is there any other time you would like to go?'

Broken record 'no'- This involves repeating a simple statement over and over again if the requester is very persistent. For example 'No, I don't want to this afternoon'. 'Oh come on it's a lovely day'. 'No I don't want to this afternoon'.

SESSION 7

PROBLEM SOLVING

AIMS:

- Increase awareness of the processes involved in decision making and problem solving
- To identify your patterns of thinking, your strengths and weaknesses
- To teach new skills to help effective problem solving and decision making

Objectives:

- 1) Active decision making
- 2) The three bad decision making styles- Hot decisions, Blaming decisions, Set ups
- 3) The decision matrix
- 4) Problem solving
- 5) Identifying your pattern (orientation)
- 6) The stages of problem solving- P.O.S.T.
- 7) Examples
- 8) Relaxation

Active decision making

We make decisions every waking minute of our lives. Similarly, life poses constant problems that need solving all the time. Because of this, we take these processes for granted and rarely bother to look more closely at how we do them.

The relapse prevention approach considers the person to be an 'ACTIVE DECISION MAKER' in relation to their addictive behaviour and not just a passive victim.

Starting the addictive behaviour, stopping/controlling/ relapsing and attending for therapy are all decisions you have made.

The three decision making styles

There are three styles associated with relapse:

1) Hot decisions

Made when you are under pressure.

They are 'panic decisions' that you make without considering the full range of consequences.



2) Blaming decisions

This is when you decide to indulge in drinking again by shifting the 'responsibility' onto other people or situations.



3) Set ups

These are when a person takes a series of simple decisions to set up a situation that compels them to indulge in drinking and that would require a moral superhero to resist.



DECISION MATRIX

DIFFERENT OPTIONS AVAILABLE	POSITIVE POINTS	SCORE (1-10)	NEGATIVE POINTS	SCORE (1-10)	FINAL SCORE

Problem solving: POST

- 1) *What is the **problem**? Describe it clearly and simply.*
- 2) *What are the various **options** you have for solving it?*
List all the alternatives you can think of.
- 3) *Use the decision matrix to **select** one*
- 4) ***Test** that option out. Is it still the best one? If not, select the next one down in your decision matrix.*

Problem solving- POST

P_{ROBLEM}

O_{PTIONS}

S_{ELECT}

T_{EST}

SESSION 4

THOUGHT PROCESSES

AIMS:

- 1) TO RAISE YOUR AWARENESS OF THINKING PROBLEMS**
- 2) TO FIND WAYS OF BEING MORE OBJECTIVE**

OBJECTIVES

- 1) What is distorted thinking?**
- 2) Automatic thoughts**
- 3) How to record automatic thoughts- brainstorm**
- 4) The Thought Diary- example**
- 5) Role play real situation**
- 6) Learn to use coping strategies (Mental Tricks)**
- 7) Role play real situation**
- 8) What are Seemingly Irrelevant Decisions?**
- 9) Story exercise**
- 10) What is the Rule Violation effect?**

We are all prone at times to unhelpful 'distorted thinking', but when we are either under excess stress or are depressed, these distortions become more exaggerated. Research has shown that there are particular types of distorted thinking.

All-or-nothing thinking

You think in absolutes, as either black or white, good or bad, with no middle ground. You tend to judge people or events using general labels, for example 'he's an idiot', 'I'm hopeless. I'll never learn to drive. I'm a complete failure.' You may condemn yourself completely as a person on the basis of a single event.

Awfulising – catastrophising

You tend to magnify and exaggerate the importance of events and how awful or unpleasant they will be, over-estimating the chances of disaster; whatever can go wrong will go wrong. If you have a setback you will view it as a never-ending pattern of defeat.

Personalising

You take responsibility and blame for anything unpleasant even if it has little or nothing to do with you. If something bad happens you immediately think 'it's my fault'.

Negative focus

You focus on the negative, ignoring or misinterpreting positive aspects of a situation. You focus on your weaknesses and forget your strengths, looking on the dark side. If you've done a good job, you filter out and reject the positive comments and focus on the negative.

Jumping to conclusions

You make negative interpretations even though there are no definite facts. You start predicting the future, and take on the mantle of 'mind reader'. You are likely to predict that negative things will happen.

Living by fixed rules

You tend to have fixed rules and unrealistic expectations, regularly using the words 'should', 'ought', 'must' and 'can't'. This leads to unnecessary guilt and disappointment. The more rigid these statements are, the more disappointed, angry, depressed or guilty you are likely to feel.

Identify and name the common thinking distortions in each of the following statements. Underline the key words which point to a thinking distortion.

Jim is kept waiting 10 minutes for his appointment. As he sits waiting, he feels increasingly angry and tense. He thinks, 'These people should be on time. They just don't care about people like me. The trouble is they think they're better than me. I'll be stuck here all day.'

Carol burns the apple pie while cooking a large four-course meal for Roger, her husband, and his business colleagues. She thinks, 'Oh no, the whole meal is ruined. I'm a hopeless cook and a complete failure as a wife. I should be a better wife to Roger.'

Jane sees her friend Barbara walking along the other side of the road. Jane thinks, 'Barbara doesn't like me any more, she's ignoring me. I must have done something to upset her. I've never really had many friends – I guess I'm just not very likeable.'

Tony is about to give a lecture and notices that he feels nervous. He thinks, 'Oh no – my mind will go blank – I'll dry up and won't be able to say anything. I'll make a complete fool of myself. This is going to be terrible.'

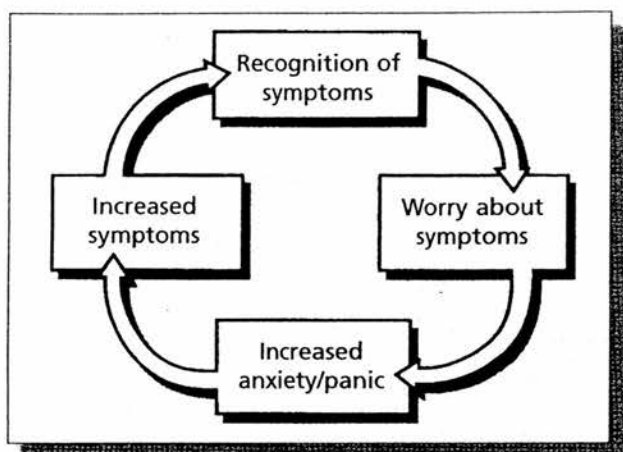
Mary loses her temper and shouts at her six-year-old son, who has been playing after being told to tidy his bedroom. Mary thinks, 'Jonathan is really terrible – he's completely out of control – he won't do a thing I tell him to. He will end up a complete waster. I shouldn't lose my temper like that. I am a hopeless mother.'

Diary Sheet

Please make an entry whenever you notice a definite drop in mood.

DATE/ TIME	DESCRIPTION OF SITUATION	MOOD LEVEL: 0-10	WHAT I WAS THINKING	ERRORS	CHALLENGES

Thinking about unpleasant symptoms will tend to make them worse. We begin the 'fear of fear' cycle, provoking further symptoms as well as preventing existing ones from disappearing.



It is difficult simply to turn your attention away from unpleasant feelings. To do so, two things are necessary.

- ◆ Be determined not to think about or dwell on the symptoms.
- ◆ Fill your mind with other things; distract yourself.

■ Distraction techniques

- ① **Mental games:** Doing puzzles, crosswords or other word games, reciting a poem, singing a song or counting backwards from one hundred, are all useful distraction exercises. The important thing is that they take your attention away from the panic thoughts.
- ② **Environmental focus:** Concentrating on a specific detail of the world around you, for example, making words out of the number plates of cars or guessing what people do for a living. Focusing on the outside world will prevent you thinking about what is going on inside.
- ③ **Using a bridging object:** This might be a photograph or a special brooch or a souvenir from a happy time. Looking at the object generates positive anxiety-reducing thoughts.

④ **Physical activity:** Giving yourself a task to do takes your mind off worrying thoughts, for example, handing drinks out at a party, changing the music, or washing up after a meal. On a more general level, keeping yourself physically active and mentally distracted from worrying thoughts by pursuing sporting activities is one of the best insulators against stress.

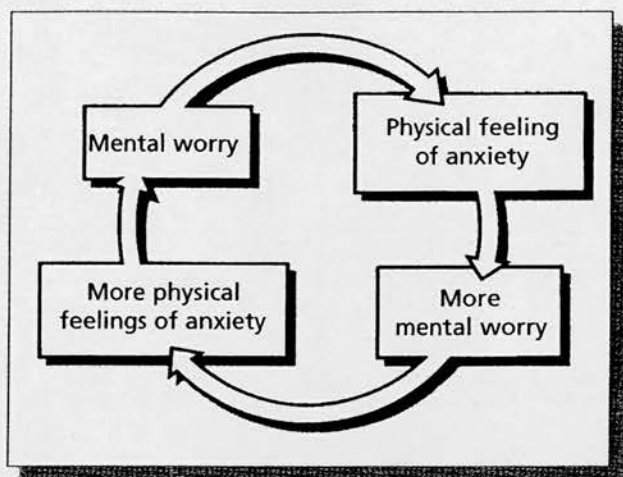
⑤ **Meditation:** Techniques derived from eastern mediation systems can also be very useful. Sometimes a *mantra* or a special word can be used. The mediator focuses the mind upon the mantra in an effortless, relaxed way and with practice can block out other thoughts and ideas and achieve a level of relaxation.

⑥ **Reading or talking:** Carry a book with you to read or talk to somebody who is with you. Ask somebody to talk to you.

Use distraction to help you get through situations, but try not to allow yourself to fall into the habit of becoming completely dependent on these techniques. After you have successfully coped with the anxiety using these techniques try to gradually do without them.

■ What is positive self-talk?

Worrying thoughts can make us feel physically anxious (heart racing, muscle tension etc), which then leads to us worrying more. ('Here we go again, I'm going to panic'.) A vicious circle soon gets established, running faster and faster under its own momentum.



Sometimes we are aware of these thoughts but often we are not. They may take the form of fleeting images or half-formed pictures in our minds. The thoughts tend to flash by automatically and very quickly.

An example may help to make this clearer. Imagine you are running upstairs when you feel a sudden sharp pain in the chest. It gives you a fright, and the thought goes through your head, 'Maybe there's something wrong with my heart'. The thought itself makes you more afraid, your heart beats faster, and the pain seems to take a long time to die away. Later on that day the same thought comes back to you. Once again your heartbeat increases and you feel afraid. The symptoms produced the thought, which made you anxious and added to the symptoms.

Positive self-talk is a copying strategy which involves breaking this vicious circle where negative thoughts lead to increased symptoms. It involves a number of stages.

■ How to practise positive self-talk

- ① **Find out exactly what you are thinking:** This is not always easy, as thoughts tend to flash through our minds so quickly and automatically that we are not always aware of them. Try writing these thoughts down on a diary sheet. Although it sounds strange, 'think about what you are thinking', or deliberately become 'mindful'.
- ② **Challenge the thoughts for how rational they are:** Research suggests that when people are under stress their thinking can often get distorted. Question your thoughts. Are you exaggerating? Are you thinking in all-or-nothing terms? Are you ignoring the positive?
- ③ **Replace negative thoughts with positive ones:** After you have challenged your existing thoughts, rewrite them in a more positive realistic language. Straighten out those distorted thoughts. It is sometimes useful to carry these positive challenges around with you on an index card.

What is the evidence?

What evidence do I have to support my thoughts?

What evidence do I have against them?

What alternative views are there?

How would someone else view this situation?

How would I have viewed this situation in the past?

What is the effect of thinking the way I do?

Does it help me, or hinder me from getting what I want? How?

What thinking error am I making?

- a Am I thinking in all-or-nothing terms
ignoring the middle ground?
- b Am I awfulising or catastrophising
overestimating the chances of disaster?
- c Am I personalising
blaming myself for something which is not my fault?
- d Am I focusing on the negative
looking on the dark side; ignoring my strengths?
- e Am I jumping to conclusions
predicting the future and mind-reading?
- f Am I living by fixed rules
fretting about how things ought to be; overusing the words should, must and can't?

What action can I take?

What can I do to change my situation? Am I overlooking solutions to problems on the assumption they won't work?

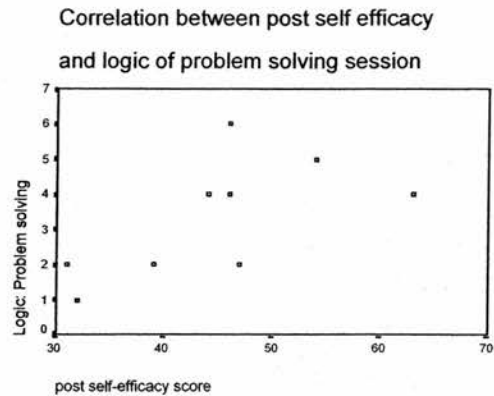
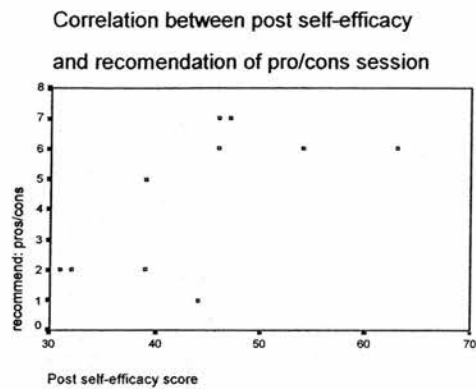
What is the worst possible outcome?

What is the worst thing that can happen and how bad would that really be?

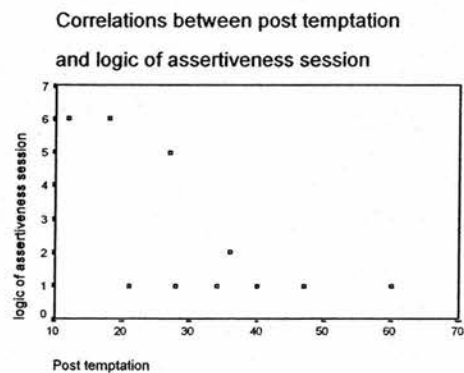
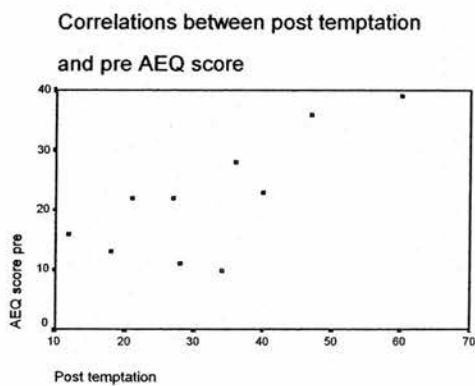
APPENDIX 7

Post Hoc Correlation graphs

1) AASE: self-efficacy and temptation

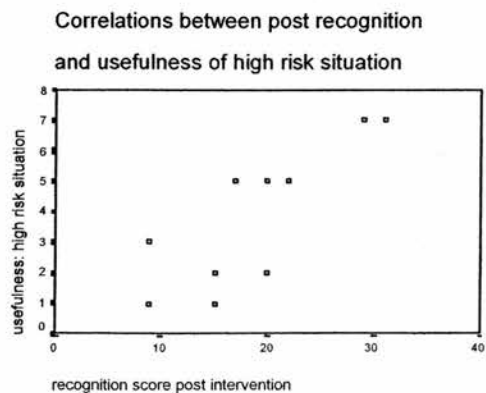
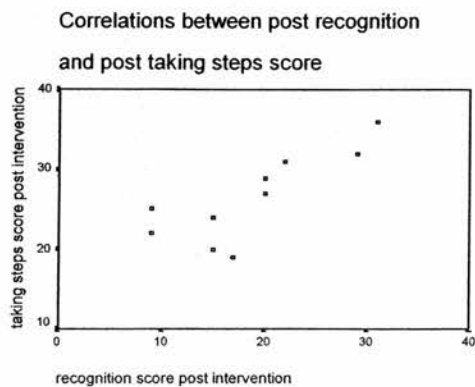


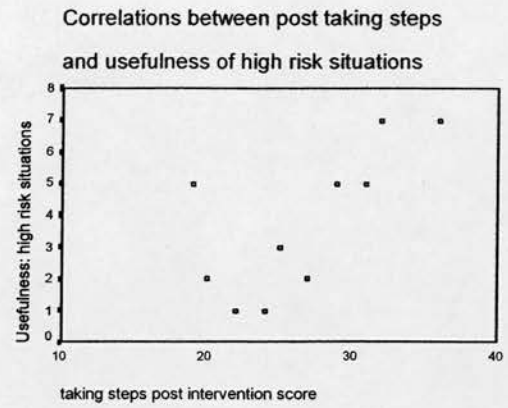
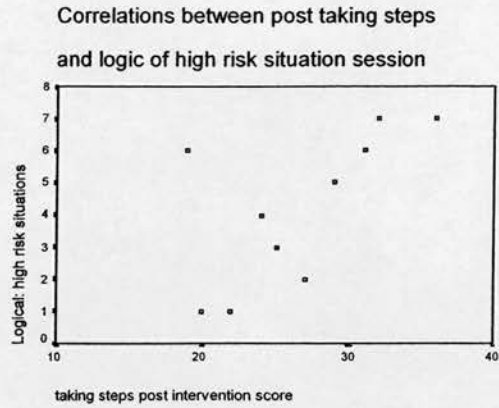
Self-efficacy graphs



Temptation graphs

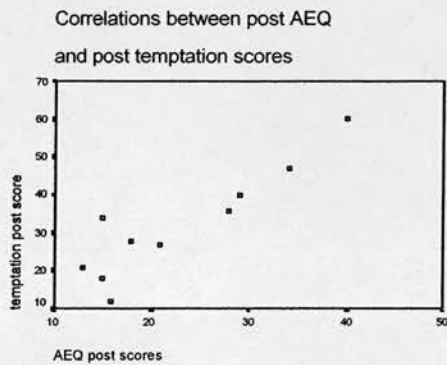
2) SOCRATES: Recognition, Ambivalence and Taking Steps





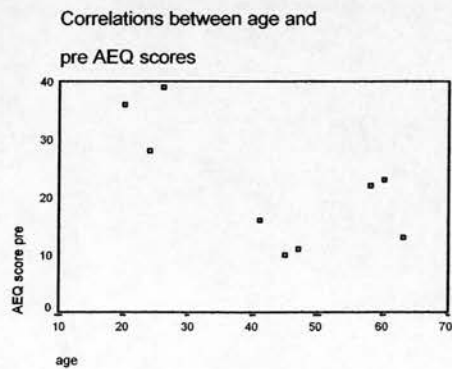
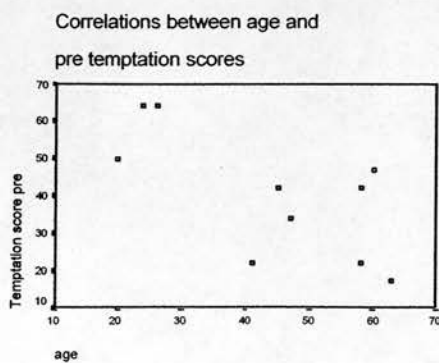
Taking Steps Graphs

3) Alcohol Effects Questionnaire

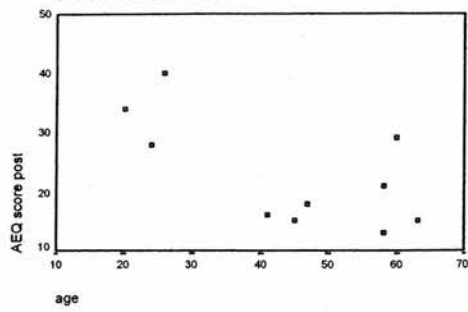


AEQ Graph

4) AGE



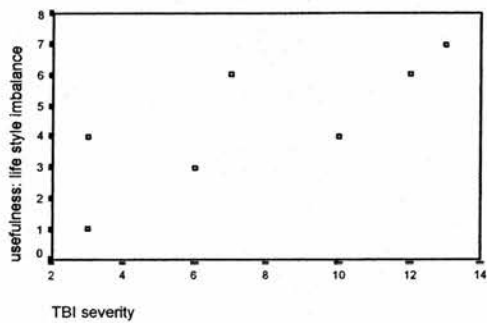
Correlations between age and
post AEQ scores



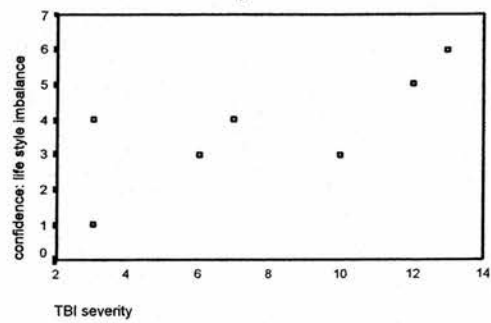
AGE Graphs

5) TBI Severity

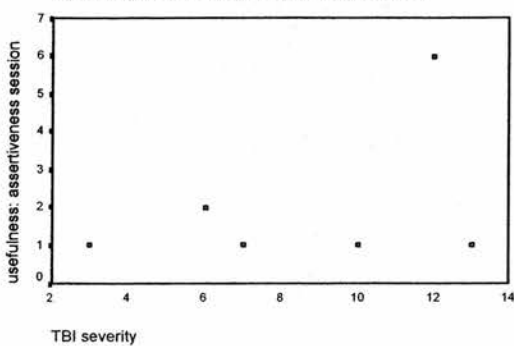
Correlations between TBI severity and
usefulness of life style imbalance



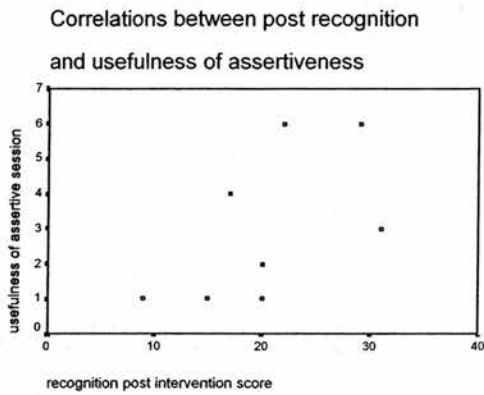
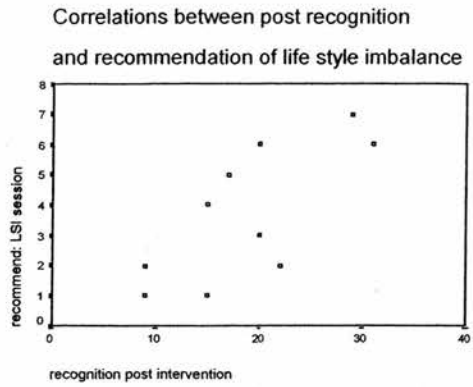
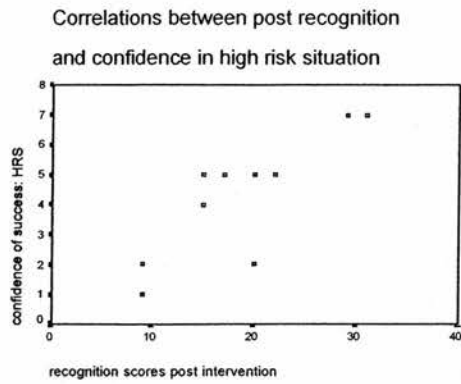
Correlations between TBI severity and
confidence in life style imbalance



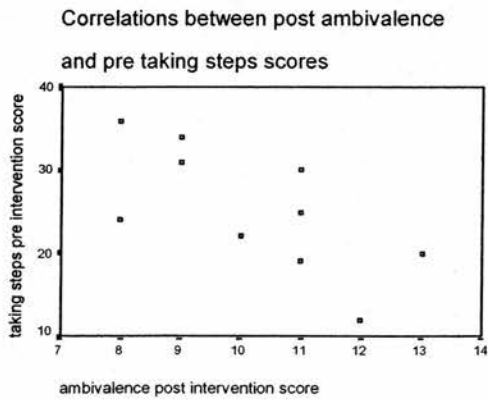
Correlations between TBI severity and
usefulness of assertiveness session



TBI severity graphs



Recognition graphs



Ambivalence graph

